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United States

Circuit Court of Appeals

For the Ninth Circuit.

Transcript of Record.

(IN THREE VOLUMES.)

INTER-ISLAND STEAM NAVIGATION COMPANY, LIMITED, an Hawaiian Corporation,

Plaintiff in Error,

vs.

GEORGE E. WARD,

Defendant in Error.

VOLUME III.
(Pages 513 to 818, Inclusive.)

Upon Writ of Error to the Supreme Court of the Territory of Hawaii.

Filmer Bros. Co. Print, 330 Jackson St., S. F., Cal.

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(Testimony of John Scott Muirhead.)

Q. As superintendent engineer of the company?

A. Of the company.

Q. What provision did the company make, Mr. Muirhead, for the replacing of worn-out material, cables, drums or anything else?

A. Well, we had spares there all ready to go in, sir.

Q. The spares, where?

A. Laying down underneath here, a spare cable.

Q. Down underneath?

A. Underneath near handy to the engine, where they *could cannot* up to.

Q. Underneath the coal-conveyor on the wharf?

A. Yes, sir.

Q. Now, you say you remember the occasion of the accident to Mr. Ward. Do you remember whether or not a foreign coal ship was in port at that time?

A. Yes, sir, there was one.

Q. What, if anything, was done with regard to the coal-conveyor prior to the arrival of the coal ship?

A. Well, prior to the arrival of the coal ship I notified Mr. Ward to go over and see that everything was in good working order; would be perhaps about a week previous to the arrival, especially the lower tower there because they were never worked as a rule from the ship previous.

Q. You instructed Mr. Ward to go down there and see that everything was all right? A. Yes, sir.

Q. Did Mr. Ward go down? A. Yes, sir.

Q. State whether or not Mr. Ward said anything to you after having gone down and inspected the coal-conveyor.

(Testimony of John Scott Muirhead.)

A. Yes, sir, [513—431] he told me the next day that everything was all O. K.

Q. State whether or not, Mr. Muirhead, it was ever reported to you by Mr. Ward that a new cable was needed on that coal-conveyor, prior to the arrival of that vessel.

A. No, he never reported anything to me about it.

Q. Was any complaint made to you, Mr. Muirhead, by Mr. Ward as to the condition of the cable prior to the time of his accident?

A. No, sir, none whatever.

Q. State whether or not Mr. Ward prior to the—what was your custom, Mr. Muirhead, with regard to visiting this coal-conveyor?

A. Well, I used to go down there about once or twice a day regularly while a ship was in.

Q. And to what part of the coal-conveyor would you go?

A. Well, I would go up around about the drum there, on top where the scales are and sometimes I would go aboard the boat.

Q. You say you would go on top, what do you mean on top?

A. Along in about this neighborhood here (indicating on model).

Q. Near the scale-house, do you mean?

A. Yes, sir.

Q. Did you ever go anywhere else on the coal-conveyor?

A. Oh, yes, take a walk around there sometimes.

Q. Now, Mr. Muirhead, had you occasion to ob-

(Testimony of John Scott Muirhead.)

serve the condition of the cable shortly prior to Mr. Ward's accident?

A. Yes, I seen it daily before that.

Q. How? Describe to the jury, Mr. Muirhead, its condition. A. Is this a piece of the wire?

Q. Well, that is a sample of a wire. Describe the condition of the cable to the jury.

A. Well, generally it was slightly chafed on the outside.

Q. What do you mean by that exactly, Mr. Muirhead, you can explain by reference to this section of the cable.

A. On this outside wire here severally lightly chafed. [514—432]

Q. Worn out?

A. Worn out slightly; there is a rough edge you can feel it if you pull your hand along.

A JUROR.—Just on the outside there?

A. Just on the outside.

Q. Which side, on the top or around—

A. No, right around here (indicating).

Mr. STANLEY.—You say it was slightly chafed and one of the jurors asked you if it was worn out and you said yes. What do you mean by that?

A. What?

A JUROR.—He said slightly worn.

Mr. STANLEY.—Was that cable worn out, Mr. Muirhead? A. No, it was not worn out.

Q. What was its condition as to being suitable for use for the purpose for which it was in use?

A. It was perfectly suitable then.

(Testimony of John Scott Muirhead.)

Q. When you say it was slightly worn and chafed are you referring, Mr. Muirhead, to the small wires or the strands of the cable?

A. The small wires generally around here; the outside edge right around.

Q. And was that the condition of the cable all around the cable or in places?

A. No, pretty well all throughout.

Q. Mr. Muirhead, how long before the accident was that? A. Oh, I am up there about every day.

Cross-examination of JOHN SCOTT MUIRHEAD.

Mr. DOUTHITT.—You don't know how long that was before the accident, Mr. Muirhead?

A. Beg pardon.

Q. You don't know how long that was before this accident?

A. I was up there about a week before that and I examined [515—433] the cable myself. I am up there every day.

Q. What is that? A. I am up there every day.

Q. And are you referring to the time that George Ward was hurt or a week before that?

A. I am referring to the time and a week previous.

Q. Then you didn't know the condition of that cable, Mr. Muirhead, at the time when Ward was hurt, did you?

A. I do know the condition of that cable.

Q. Well, didn't you mean to say that you were testifying to the condition a week prior to the time that Ward was hurt?

(Testimony of John Scott Muirhead.)

A. I said a week previous; also at the time that Ward was hurt.

Q. Oh, at the time that Ward was hurt?

A. Yes, sir.

Q. And you came down there on the coal-conveyor on the day that Ward was hurt?

A. Yes, sir, I was there that day that Ward was hurt.

Q. And you saw the condition of the cable?

A. I saw the condition and I saw the condition previous to that.

Q. That cable was perfectly suitable for the purpose for which it was being used, was it?

A. Yes, sir.

Q. Yes. And the only thing, Mr. Muirhead, that you observed as far as that cable was concerned was that it was slightly worn? A. Yes, sir.

Q. Do you know how long that cable had been in use?

A. Well, perhaps I might give an estimate; I don't know if it would be correct.

Q. Well, you have had a great deal of experience, Mr. Muirhead, with cables. How long would you say that that cable had been in use?

A. Well, I could not tell you how long it had been in use.

Q. Well, you were down there two or three times a day, were you not?

A. Yes, but I don't remember when it was put [516—434] in.

Q. You do not? A. No, sir.

(Testimony of John Scott Muirhead.)

Q. Well, from your general knowledge of the situation being down there twice a day or two or three times a day, you were perfectly familiar with that cable, were you not, Mr. Muirhead?

A. I believe I was.

Q. You were? A. Yes.

Q. And you could not tell us, then, how long the cable had been in use? A. No, sir.

Q. But at the time of this accident you went down there and saw that the cable was perfectly fit for the purpose which was required of it?

A. I went down there that day, as I go down every day.

Q. How long after the accident was it that the cable was taken away?

A. Well, I suppose after the ships were finished, there was a new cable, I believe.

Q. What do you mean by suppose?

A. There was three ships arrived, all coming in together.

Q. Don't you know, Mr. Muirhead, that that cable was taken out on the Saturday immediately after the Monday after George Ward was hurt; don't you know that? A. No, sir, I do not.

Q. You do not? A. No.

Q. But you were down there every day?

A. Yes.

Q. You didn't go down there to the conveyor after Ward was hurt then? A. Oh, yes, I did.

Q. You did not go down to this coal-conveyor after Ward was hurt?

(Testimony of John Scott Muirhead.)

A. Yes, I went down there after Ward was hurt.

Q. And you went there twice a day, did you, Mr. Muirhead? A. Sometimes twice and always once.

Q. What?

A. Sometimes twice and always once.

Q. And you don't know and cannot tell this jury that that cable, Mr. Muirhead, was taken out on the the Saturday immediately [**517—435**] following Ward's accident?

Objected to as already asked and answered.

Objection sustained.

Q. And there was nothing so far as you observed at the time that Ward was hurt which led you to believe that the cable was otherwise than in perfectly good condition for the work that was required of it?

A. I considered it was in perfectly good condition for that work.

Q. And would have been in perfectly good condition, Mr. Muirhead, for the next eight or ten days afterward?

A. Well, I don't know what transpired between that and the—

Q. No, I am not asking you about that. From what your observation was, your observation of this cable, it was in perfectly good condition so far as you could say and would have been under ordinary circumstances in perfectly good condition for a week or a month or two months after the accident happened, would it not? A. It might and it might not.

Q. Well, now, I am asking you as you saw it?

(Testimony of John Scott Muirhead.)

A. Well, I cannot tell; the inside core if it remained employed is going to get rotten at times, I cannot tell any more than any other man.

Q. What is that?

A. I cannot tell if the inside core is old any more than any other man.

Q. I am asking you as you saw the cable on the day that Ward was hurt, that cable, the indications were as you have told us before? A. Yes.

Q. That the cable was all right for the purpose for which it was being used, only it was slightly worn; that is your testimony, is it not? A. Yes, sir.

Q. And from your observation of that cable, Mr. Muirhead, as you saw it on that day, that cable in your opinion could have been used for possibly a month or two months afterwards, could it not, as you saw it?

A. Yes, but I believe they were [518—436] changing a drum.

Q. Oh, that changing the drum happened a month before, Mr. Muirhead? A. Oh, no.

Q. That change in the drum was not after the cable was it, Mr. Muirhead; you don't want the jury to understand that?

A. The change in the drum was after the cable.

Q. After the installing of the cable? A. It was.

Q. Why?

A. Why, it was ready there, the drum down below there, as I remember, has not the double taper grooves at the sides and it wears out there.

Q. How long do those drums last, how long do

(Testimony of John Scott Muirhead.)

the drums last, a drum that is put on there. You know about these things, Mr. Muirhead?

A. Sometimes six months, perhaps a year.

Q. And if there had been a new drum installed on the 6th day of June, Mr. Muirhead, just one month and two days prior to the time of this accident, there was no necessity for putting in a new drum, was there?

A. I think there was. It depends on whether this drum was curved out at the side. There was one drum there that was too flat; the rope would not fall back.

Q. Was that the drum that was installed on the 6th day of June, 1912, Mr. Muirhead?

A. I don't know the date when it was installed, sir.

Q. Well, did you ever see the drum? If you went down there twice a day did you ever see the drum that was installed on the 6th day of June, 1912?

Objected to, as already asked and answered.

Mr. DOUTHITT.—Well, about a month prior to the accident to Ward you know that there was a new drum installed, about a month prior to Ward's accident, do you not, Mr. Muirhead?

A. Yes, I believe there was one there.

Q. Well, you know it, don't you? A. Yes, sir.

Q. Because Ward had to leave the shop when a new drum was [519—437] put in, did he not?

A. Yes, I suppose he did.

Q. Did you ever see that drum that was put in?

A. Yes, sir, I have seen the drum.

Q. Was the drum all right?

(Testimony of John Scott Muirhead.)

A. Well, I don't think it was. It was too—the flange was not large enough on the sides for the rope to come down properly.

Q. When was the first time that you saw that drum? A. Oh, I could not give you the date.

Q. How long before Ward's accident was it that the drum was observed there?

A. I could not say.

Q. Well, was it a week?

A. Well, I could not say, I am telling you.

Q. Before the coal-boats came in—were the coal-boats in?

A. No, I don't think they were, but I am not quite certain, though.

Q. Well, now, the best of your recollection is, Mr. Muirhead, that the coal-boats were not in; the island coal-boats were being loaded, is that your best recollection; Inter-Island coal-boats were being loaded, is that your best recollection?

A. Yes, sir, they are always being loaded.

Q. Well, I am asking you, Mr. Muirhead, I don't know.

A. Well, I am not quite certain which boats was in whether it was a collier discharging coal or whether it was the Inter-Island boats being coaled.

Q. And you don't know how long before Ward was hurt, whether a week, ten days or a week?

A. I don't know, I could not say positively.

Q. You could not say positively?

A. No, I could not, sir.

(Testimony of John Scott Muirhead.)

Q. Did you observe that the drum was not working properly?

A. I noticed it was climbing up on one side there.

Q. And did you put in a new drum as soon as you noticed that?

A. I believe Ward put in one. Is that the one you have **[520—438]** reference to?

Q. Certainly, that is the one I am referring to, that is the time Ward put in a drum?

A. Yes, sir. The other one was put there, it was too flat.

Q. There was a shoulder worn on one of the drums? A. Yes, sir.

Q. And Ward put in a new one? A. Yes, sir.

Q. Now, that is the drum you have reference to?

A. That is the drum I have reference to first, then there was another one put in afterwards.

Q. After what?

A. After that time, that was too flat.

Q. After what?

A. After the one that Ward put in.

Q. Yes, was that after the accident?

A. Yes, sir.

Q. How long after the accident?

A. Perhaps a month, after we got clear of the vessels, am not quite certain of the date.

Q. Then it was a month or so after the one Ward put in, that another new drum was put in after Ward was hurt, that another new drum was put in?

A. There was one put in after the coal vessels

(Testimony of John Scott Muirhead.)

were all finished, what time it was, that I don't know, I don't remember the dates or how long it was.

Q. But your best recollection of it is, Mr. Muirhead, that it was about a month or so after Ward was hurt?

A. I won't be positive, it might be a month, it might be six weeks.

Q. Now, this drum that was being used at the time that Ward was hurt, that was in use from the time it was put in until after his accident, wasn't it?

A. That drum was in use until the finish of the coal ships.

Q. Didn't you tell us a few minutes ago that it was a month or so after Ward was hurt that they put in a new drum?

A. After the coal ships. I didn't say a month, I said it might be a **[521—439]** month or five or six weeks, I don't remember the dates. It is the drum I am speaking of.

Q. The drum then worked all the time up to the time that the coal ships were all discharged when a new one was put in, another new drum was put in?

A. Another new drum was put in.

Q. Where was the flat in that drum, did you say the drum was too flat, what do you mean by that, you say the drum was too flat?

A. If you have got a pencil I will try and show you (the witness draws sketch of drum). There is where it was too flat, there, it wouldn't come down,

(Testimony of John Scott Muirhead.)

there is where it ought to have been like that (indicating on sketch making diagram and illustrating).

Q. It ought to have been in the way that you have shown. Now, let us get this exactly right. The drum, as I understand you, should have been constructed or made as the lines A' to B' are instead of in the way from A to B? A. Yes, sir.

Mr. STANLEY.—A to B represent the curved line and A' to B' representing the dotted line?

A. The dotted line to A and B.

Mr. DOUTHITT.—The dotted line is A' to B'?

A. This is the one here.

Q. Now, you have drawn correct, Mr. Muirhead, I don't want any mistake about it.

A. It is roughly drawn.

Q. We don't expect to have perfect tracings. You have drawn your drum, the manner in which it was, showing the line A to B, this down here and also you put in some dotted lines showing the mark A' to B', that is the manner in which you say it should have been done in the way from A' to B'?

A. Yes, sir.

A JUROR.—Mr. Muirhead, does that drum come here from New York or was it made locally?

A. I am not certain whether that drum was made in New York and was a *spare* that came with it or was made down in the Honolulu Iron Works. [522—440]

Mr. DOUTHITT.—I was just getting to that in response to the question that was asked by Mr. Bailey. Don't you know, Mr. Muirhead, that that

(Testimony of John Scott Muirhead.)

was an A. W. Hunt and Company drum?

A. I don't care who made it, I don't know whether it was a Hunt drum or a Honolulu Iron Works drum.

Q. And the Hunt drum are made particularly with reference to the engine, those are the people according to whose plans and specifications that this coal-conveyor was constructed?

A. It is. Well, do you know that that drum had been over to the Iron Works and had been turned down previous?

Q. I am not asking you that.

A. You see, in regard to the Hunt make, it was made by these gentlemen and come with this cable, but that was turned down.

Q. What was turned down? A. The drum.

Q. By whom? A. The Honolulu Iron Works.

Q. But the cable was not turned down, was it, Mr. Muirhead? A. Oh, no.

Q. You mean, then, that that drum—what did they use it for? A. How do you mean?

Q. What do you mean by being turned down?

A. Take a lathe to the grooves where the wire previously cut it out and reduce it down to ordinary.

Q. Reduce it down to ordinary?

A. Yes, true it up.

Q. What part of the drum was reduced down by the lathe?

A. Right where that line is where the cable goes.

Q. It was hollowed out more, do you understand?

A. Give it to me and I will show you.

(Testimony of John Scott Muirhead.)

Q. Just a moment before we look at this. Was the drum hollowed out more?

A. Of course it was much more to true it up and get it back to its proper place as near as they possibly could.

Q. And that was done by means of a lathe?

A. Yes, sir. **[523—441]**

Q. In other words, when a shoulder is worn on a drum—when a shoulder is worn on a drum it is taken over to the Inter-Island shops or it may be taken down to the Honolulu Iron Works and then the other side of it is hollowed out and made a shoulder, is not that right?

A. No, sometimes they turn them both out, come right down there and reduce this here, it comes right around this mark here to true the whole business with the cable. Anyway, on one side it will cut the shoulder in and this top coil is likely to crowd over and when they come too short in here they won't slip down the same as that will.

Q. In other words when that drum first arrived you know that those drums are sent out here originally by the C. W. Hunt Company for the use of this conveyor? A. Yes, I believe so.

Q. And when the drum is sent out from the shops of the W. C. Hunt and Company and arrives here at the Inter-Island Steam Navigation Company's shop, the coal-conveyor, the drums are in good condition, are they not? A. Yes, sir.

Q. And fit for the purpose which is required of them, to wit, the cable is wound four times around

(Testimony of John Scott Muirhead.)
that drum, is it not? A. Yes, sir.

Q. That the drum is in good condition and the cable, but subsequently it wears down?

A. Yes, sir.

Q. But as it comes from the ship the drum is in good condition? A. Yes, sir.

Q. Now, Mr. Muirhead, let me ask you this: was the drum that was the new drum that was put in before the time that Ward was hurt, was that a new drum from the C. W. Hunt Company?

A. I don't quite grasp it. Do you mean that the drum that Mr. Ward put in—

Q. Yes.

A. The one that was there when the accident occurred.

Q. You testified here that there was a new drum put in, do [524—442] you remember that?

A. Yes.

Q. But you don't exactly remember the date?

A. Yes.

Q. Now, then, Mr. Muirhead, the question that I ask is this: Was the new drum that Ward put in before this accident, was that the new drum that had come out from the factories of the C. W. Hunt Company?

A. I believe it was an old drum we turned in the Honolulu Iron Works.

Q. You believe? A. Yes.

Q. Are you prepared to swear positively on this stand, Mr. Muirhead, that that was an old drum which had been returned from the Honolulu Iron

(Testimony of John Scott Muirhead.)

Works? A. I am not prepared to swear to it.

Q. You are not prepared to swear positively to the fact that it was not a new drum sent out from C. W. Hunt and Company, that was installed?

A. I am not prepared to swear to anything of the kind.

Q. Then, if it were for the sake of argument, if it were a new drum the cable would run smoothly over the drum, would it not?

A. It might and might not, I don't know for sure.

Q. Well, why don't you know?

A. Well, I don't know what the slot of the curver is that is in there, it might not.

Q. You don't know what slot or curve is in, what do you mean by that?

A. The curve which each rope comes around. If you are getting a flat curve there it wouldn't be any use, the cable would be bad for riding over it.

Q. I understand, but you were down there two or three times a day, every day once a day at all events, sometimes twice a day and sometimes three times a day. Now, I am asking you the possibility, I am asking you if a new drum was used, if a new drum sent out from the factories of C. W. Hunt Company, your cable would not revolve and run around on that drum without raising any friction or any difficulty around it? A. I believe it would. **[525—443]**

Q. You believe it would? A. Yes, sir.

Q. That is the experience of an engineer, your experience as an engineer of many years' standing?

A. Yes, sir.

(Testimony of John Scott Muirhead.)

A JUROR.—When those drums are sent to the Honolulu Iron Works to be trued up who gave instructions with regard to the pitch and the fall that was to be made in them?

A. Well, I have done that.

Q. Did you do all this work, or anyone else?

A. Believe Ward done it himself.

Q. But usually you gave your instructions?

A. If Ward would make a little template and I made one when we took one out.

Mr. DOUTHITT.—Mr. Muirhead, in order to make that work, in order to have your drum and have your cable running over your drum properly it has got to be perfectly smooth so as to give the cable the play, it cannot have any kinks or angles or projections in it, it has got to be something like this, does it not, right around? A. Yes, sir.

The further hearing of this case was continued until 8:30 o'clock, June 9th, 1914. **[526—444]**

In the Circuit Court of the First Judicial Circuit, Territory of Hawaii.

JANUARY TERM, 1914.

GEORGE E. WARD,

Plaintiff,

vs.

INTER-ISLAND STEAM NAVIGATION COMPANY,

Defendant.

(Testimony of John Scott Muirhead.)

June 9th, 1914.

Cross-examination of JOHN SCOTT MUIRHEAD, resumed.

Mr. DOUTHITT.—On which side of the drum was the cable wound?

A. Wound the side towards Ewa.

Q. You are positive of that, Mr. Muirhead?

A. Yes, sir, I am almost positive of it.

Q. Don't you know that the cable was on the right side of the drum towards Waikiki?

A. No, sir.

Q. What? A. No, sir.

Q. We will take this—the drum here, Mr. Muirhead?

A. That is the way the plant is running at the present time.

Q. Just take this piece of string, we will call this the cable. Now, illustrate to us the position in which that was wound around the drum.

Mr. STANLEY.—We object to it as not proper cross-examination, incompetent, irrelevant and immaterial.

Objection overruled. Exception.

Mr. DOUTHITT.—Please show the jury, Mr. Muirhead, how the [527—445] cable was wound around the drum at the time of this accident.

A. (Witness winds string around exhibit No. 5, used as a drum to illustrate, putting three turns around exhibit 5).

Q. That is the way it was, is it, Mr. Muirhead?

A. Yes.

(Testimony of John Scott Muirhead.)

Q. Now, don't you know, Mr. Muirhead, the way that you have placed that cable that it would be running on the right side instead of on the left side?

A. It is running on the side now as it appears on the drum, the way the drum is looking towards us from the place.

Q. Don't you know that the manner in which you have placed that cable, Mr. Muirhead, that the wire would be on the right side instead of the left side?

A. No, sir.

Mr. STANLEY.—I object to the question, the wire or rope.

Mr. DOUTHITT.—The cable, I mean.

Q. Don't you know the manner in which you have placed this string around exhibit 5— A. Yes.

Q. Would make the string operate on the right side of the cable instead of the left?

Mr. STANLEY.—The right side of the pulley, the exhibit.

Mr. DOUTHITT.—The drum, the drum rather than on the left?

A. Gentlemen—

Mr. DOUTHITT.—Answer my question.

Mr. STANLEY.—One moment, the witness has the right to answer the question as he sees fit.

The COURT.—Answer the question, if you can, first, and then make your demonstration afterwards.

Mr. DOUTHITT.—Answer the question.

A. The drum is running towards me, as it were, this here, it is running taking up that way and paying out that way.

(Testimony of John Scott Muirhead.)

Q. Don't you know the way you have fixed that cable on that drum or on the exhibit here was the very cause why it kept getting off and tangling up on the drum when the cable was first installed [528—446] down there, don't you know that?

A. No, sir.

Q. Now, let me show you and ask you if this is not the proper way to wind that cable on that drum?

Objected to. Objection sustained.

Q. I will ask you if this is not the proper way, Mr. Muirhead, the way that the cable was wound around the drum and the way it is to-day down there at that coal-conveyor, the way in which it was wound around the drum and the manner in which I will show you and ask you to refresh your recollection to that extent?

Objected to. Objection sustained.

Mr. DOUTHITT.—Is it not a fact, Mr. Muirhead, that the way that that cable was wound around the drum at the time of this accident was in the manner in which I will show you—that it went that way, but it came back this way—this way and that way, three, four, out this way, is not that the situation, you put it in at the place?

A. Gentlemen, didn't I show you that, didn't I leave this end out here (referring to string on exhibit 5), that end up to the corner of the pulley? I told you the drum ran towards me and the cable was taken up that way and paid out that way.

A JUROR.—Three turns and four turns.

Mr. DOUTHITT.—Now, wound around four times

(Testimony of John Scott Muirhead.)

like that, backward this way, don't you know that if that is on the drum, Mr. Muirhead—— A. Yes.

Q. And the drum is revolving towards the right, that all of these wire ropes or cables would go over towards the right-hand side of that drum?

Objected to as incompetent, irrelevant and immaterial and improper cross-examination.

(Last question read:)

Objection sustained to the last question as propounded. **[529—447]**

Mr. DOUTHITT.—That is an absolute reproduction in print of the engine that was used?

A. Yes.

Q. That is the C. W. Hunt & Company engine (showing book to witness)?

A. Yes.

Q. This, I take it, is the drum that you referred to? A. That is the drum, sir.

Mr. DOUTHITT.—I offer this book in evidence.

Objected to as incompetent, irrelevant and immaterial.

Objection sustained.

Mr. DOUTHITT.—With the drum moving in the direction towards the right and the cable travelling in a mauka direction or traveling in the same direction as the drum, Mr. Muirhead, I will ask you, Mr. Muirhead, I will ask you which side of the drum the cable which was wound around the drum four times would work, right or left, or did work?

Objected to as incompetent, irrelevant and immaterial and improper cross-examination.

(Testimony of John Scott Muirhead.)

The COURT.—Did you indicate the manner in which he has, himself, placed the cable on the drum?

Mr. DOUTHITT.—Yes, sir.

The COURT.—If Mr. Ward was under his direction and control and was directed by him to see that the cable and drum and everything was in proper running order and it developed on cross-examination that a certain drum was placed in there on the 6th of June or about the 6th of June, but that that drum was an old drum or taken out a month after the accident because it was too flat, that is a matter of cross-examination.

(Last question read.)

Objection overruled. Exception.

The COURT.—Can you answer that, Mr. Muirhead?

A. Beg pardon?

Q. Can you answer that question?

(Last question read.) [530—448]

A. I think I told you how it worked.

Q. Tell us again which side of the drum was the cable, as I have described it, traveling in the same direction as the drum, which side of the cable was on that drum?

Mr. STANLEY.—Which side did it work?

Mr. DOUTHITT.—Which side did it work?

Q. Now, which way did the cable work as the drum was going around?

A. I showed you already, sir.

Q. Which side of the drum?

A. I showed you already, I told you gentlemen

(Testimony of John Scott Muirhead.)

here it was running toward this way and paying out here.

The COURT.—Objection sustained. He may be able to answer it, but I do not understand the question.

Mr. DOUTHITT.—With reference to the drum here, Mr. Muirhead, with reference to the drum and with reference to the way in which the cable was wound around the drum at the time of the accident, which side of the drum was that cable working?

Mr. STANLEY.—Can you agree with me that the objection I have made to the examination of the witness with regard to the cable around the drum or the action of the cable around the drum will apply to all these questions?

Mr. DOUTHITT.—Yes.

The COURT.—The objection will apply to all this class of questions. Answer the question, Mr. Muirhead.

A. The drum is running toward me, the cable is running in there and paying out on that side there going out there. That is all I have got to say about it, sir.

Mr. DOUTHITT.—Do you mean to tell me, Mr. Muirhead, that you, the superintending engineer of the Inter-Island Steam Navigation Company, that you don't know which side the cable was working, right or left at the time of this accident?

A. I have answered your question already.

Q. Is that the only answer that you can give us?

A. Yes. **[531—449]**

(Testimony of John Scott Muirhead.)

Q. All right. How much was that cable worn as you have said?

A. I think I went through that yesterday.

Q. Yes, I know that, but let us go through it again today. A. It was slightly chafed on the outside.

Q. What do you mean by slightly chafed?

A. That is all I can explain it to you, just rough.

Q. Rough? A. Yes.

Q. And how much was it chafed, was it chafed a quarter of an inch or one-eighth of an inch or what?

A. No, no. What do you mean by a quarter of an inch or an eighth of an inch?

Q. Just exactly what I say, Mr. Muirhead.

A. Well, supposing you are chafing that on the outside reckoning that up there, what would you call it, one-eighth of an inch or a quarter?

Q. Well, I am asking you as a superintending engineer of the Inter-Island Steam Navigation Company?

A. I could make them understand but I don't think I could make you understand.

Q. No, I don't think you could, Mr. Muirhead.

A. It is slightly chafed on the outside, that is all I can say about it.

Q. By chafing you mean roughened?

A. Yes, roughened, and worn, slightly worn.

Q. Do you mean worn smooth or what?

Objected to as already asked and answered.

Mr. DOUTHITT.—Were any projections—were the wires sticking out in any way to make it rough?

A. Well, no, it was just rough by feeling on the

(Testimony of John Scott Muirhead.)

hands, you could feel it that way, and tell on your hands, it might be, but it didn't show unless you were feeling it.

Q. And that condition continued right up to the time that Ward was hurt? A. Yes, sir.

Q. And how long after Ward was hurt did that condition occur [532—450] or continue?

Objected to as improper cross-examination, incompetent, irrelevant and immaterial.

Objection sustained.

Q. When was the first time that you observed that roughened condition of the cable?

Objected to as already asked and answered.

Objection sustained.

Q. And you had occasion to observe the roughened condition of the cable every day, did you?

Objected to.

Mr. DOUTHITT.—I have not finished the question.

Q. And you had occasion to observe the roughened condition of the cable every day from the time you first discovered its condition up to the date of Ward's accident?

Objected to as already asked and answered and not proper cross-examination.

Objection sustained.

Q. Was the condition of the cable any worse at the time—the day that Ward was hurt, than the time when you first examined it?

A. Well, it was not perceptible to me.

Q. How is that?

(Testimony of John Scott Muirhead.)

A. It was not perceptible. I don't think there was any difference in the cable whatever.

Q. No difference in the cable whatever?

A. Not to my looking at it.

Q. Did you go down specially to the coal-conveyor for the purpose of looking at this cable?

A. No, sir, not specially to the coal-conveyor to look at that cable, to look at everything in general.

Q. When did you go down there to look at everything in general?

A. Every day I am down there, sir, and cast my eyes around the place once or twice.

Q. Now, if anything happened to the cable, Mr. Muirhead, **[533—451]** there was a special man by the name of Williamson, a rigger, who attended to the splicing and repairing of the cable, didn't he?

A. Yes, sir.

Q. What? A. Yes, there was a man there.

Redirect Examination of JOHN SCOTT MUIRHEAD.

Mr. STANLEY.—Mr. Muirhead, you say that after Ward's accident and within a month or six weeks thereafter, that a new drum was put in at the coal-conveyor, *but* whom was that drum put in?

A. By me, sir.

Q. By you personally? A. Yes, sir.

Q. And now, Mr. Muirhead, can you, by any means fix the approximate date on which that new drum was installed? A. I can.

Q. How? A. By looking up the books.

Q. Have you since you were on the stand yesterday

(Testimony of John Scott Muirhead.)

refreshed your recollection? A. I have, sir.

Q. And what have you learned?

A. I have learned the time I took it out and sent the other one to the Honolulu Iron Works.

Q. And when was that, Mr. Muirhead?

A. On July 20th I think it is.

Q. Of what year? A. 1912.

Q. Anything else? A. Previous to that—

Q. I am not asking you that, just answer my question. A. All right.

Q. Now, Mr. Muirhead, you were asked if it was not a fact that the drum that was installed by Mr. Ward was not a C. W. Hunt [534—452] & Company drum. I will ask you how many drums in all the Inter-Island Company received from C. Hunt & Company? A. Two.

Q. And when did they receive them?

A. They received them when the plant came.

Q. And that was about early in 1909, was it not?

A. About that.

Q. So it was finished in 1909?

A. I am not certain of the date when it arrived.

Q. Were those drums used?

A. Yes, sir, there was one put in for to work and that left one spare one.

Q. One spare one? A. Yes, sir.

Q. Now, after you had either discarded those drums or dispensed with their further use where did the Inter-Island Company get their drums from?

A. The Honolulu Iron Works, sir.

Q. What was the trouble, if any, Mr. Muirhead,

(Testimony of John Scott Muirhead.)

with the Hunt & Company drums?

A. Well, when they wore down to a groove the rope would not slip back to its proper place, it climbed and raised, I had to take them out and send them over to the Honolulu Iron Works to get them returned, to turn that part out and we found them that thin so they would not do any more, so I ordered new ones from the Honolulu Iron Works and made them much heavier in the body.

Q. Will you explain, Mr. Muirhead, to the jury what you mean by the drum of Hunt Brothers being too thin, if you can, by a diagram illustrate to the jury what you mean. Do it as carefully as you can, take your time.

A. (Witness illustrates with diagram.) That here you can make that much more thick.

Q. What do you mean by that here?

A. Where the wires go.

Q. Do you mean the space enclosed in these lines?

A. Yes, sir, about that.

Q. That is what you mean? A. Yes, sir.

Mr. STANLEY.—Showing on the diagram section of the illustration [535—453] marked A. B. C. D.

A. This here would look about the size of it originally.

Q. Which part? A. This part here.

Mr. STANLEY.—I mark it X, the portion shown on the diagram as the portion being shaded, that is the Hunt drum as it originally was?

A. Yes.

Q. Now, what did you do, you say it was too thin?

(Testimony of John Scott Muirhead.)

A. I got it made much thicker here about an inch, possibly, or more, right around the pattern so as to enable us to turn this place down and still keep the strain on.

Q. You added an inch on the diagram so as to straighten or increase the part marked X, is that right? A. That is right.

Q. Anything else you want to say?

A. That is all.

Mr. STANLEY.—I offer this in evidence and ask that it be as defendant's exhibit.

The COURT.—It may be received in evidence and marked Defendant's Exhibit 10.

Mr. STANLEY.—As I understand you then, Mr. Muirhead, as the cable worked on the drum from time to time a shoulder would form on this part marked X, the drum would have to be taken out and smoothed down? A. Smoothed down.

Q. To take away the shoulder? A. Yes, sir.

Q. You added this inch here in order to lengthen the life? A. The life of the drum.

Q. And when, Mr. Muirhead, was that improvement or change made in the drum?

A. In September, 1909.

Q. September, 1909. Now, how do you fix that date, Mr. Muirhead?

A. By referring to my books in the shop.

Q. Have you that book here? A. I have, sir.

Q. While we are examining that, Mr. Muirhead, I will ask you another question: From the time in September, 1909, when you ordered the Honolulu Iron

(Testimony of John Scott Muirhead.)

Works a drum to be changed as you have described, what drums had been used or were used up to the time of Ward's accident on that coal-conveyor? A. Honolulu drums, sir. [536—454]

Q. What do you mean by Honolulu drums?

A. Honolulu Iron Work's drums, made by them.

Q. From that time on did you use Hunt Company's drums?

A. After they got worn out they were discarded.

Q. From that time, from the time that you got the new drums from the Honolulu Iron Works, did you use Hunt Company's drums?

A. One minute please, those drums were made, we put in a new one, you understand, the spare one, and took that out and that was used up and then it was discarded, it was too thin, it was liable to break with us and we had them made all thicker there so that we would have a longer life for them to return them up as required.

Q. From the time that the Hunt Company, the original two that you got from the Hunt Company, from the time that they were discarded, what drums were you using prior to Ward's accident?

A. Made by the Honolulu Iron Works.

A JUROR.—Mr. Muirhead, can you recollect how long those two drums were in use?

A. Well, not a month or two, I could not, or a year perhaps, but they were discarded, then shortly afterwards, after that time in 1909, because they were not lasting long at all, they were cutting through and we had to get heavier ones made from the Honolulu Iron Works.

(Testimony of John Scott Muirhead.)

Q. When you say, Mr. Muirhead, the entry in your books of September 13th, 1909, are you referring to an entry Honolulu Iron Works, September 13th, 1909, number 501, coal-conveyor, *I* cast iron rope drum, an old one, to be one inch thicker in body?

A. Yes. I am refering to that drum we are speaking of now; that was the order at that time.

Q. You testified, Mr. Muirhead, before you wound this drum [537—455] that the cable would pay out in this direction?

A. That is going towards that end.

Q. That is going towards makai. And which do you call the right or left side of the drum, which is it?

A. I don't know how you stand there looking at the engine.

Q. That was Mr. Douthitt's question. Was it paid out right or left?

A. The juror would understand it better by seeing that this rope was running towards that end and this was coming in on this side up here.

Q. Where did this go when it got to the top of the coal-conveyor? A. This way.

Q. And this one here paying in the coal-conveyor and going away? A. It runs over here.

Q. It comes from the drum over the weight?

A. Then from the coal-conveyor down that weight.

Q. Where does that go to? A. Over that pulley.

Q. Then where does it go to?

A. It runs that way.

Mr. STANLEY.—It runs mauka? A. Yes.

Mr. STANLEY.—We offer this book in evidence.

The COURT.— It may be received in evidence and marked Defendant's Exhibit 11.

[Testimony of James A. Kennedy, for Defendant.]

Direct Examination of JAMES A. KENNEDY, called for the defendant, sworn.

The CLERK.—Your name, please?

A. My name, James A. Kennedy.

Mr. STANLEY.—Mr. Kennedy, where do you reside? A. Honolulu.

Q. And what is your occupation at present, Mr. Kennedy? [538—456]

A. I am with the Inter-Island Steam Navigation Company.

Q. In what capacity?

A. President and general manager.

Q. And how long have you held that position?

A. I think it was in 1902 I went there.

Q. As president and general manager of the company, Mr. Kennedy, what are your duties?

A. What is that?

Q. As president and general manager of that company what are your duties?

A. I have the superintendence or oversight over all the different departments of your company. Take, for instance, there is the transportation end of it, there is the ships, the ship chandlery, marine railway, coaling plant. I think that is about all.

Q. You say among other things under the operation of the company is the coal plant; do you remember, Mr. Kennedy, when that coal plant—by coal plant I take it that you mean coal-conveyor?

(Testimony of James Kennedy.)

A. That is the whole coal plant, yes, sir.

Q. When that was installed by your company?

A. Yes. You asked me if I remember when it was installed?

Q. Yes. A. Yes.

Q. About when was that?

A. As near as I can remember I was in New York in 1907 and placed the order. I think it was in November. It began coming out somewhere about December of 1908, I think, and it was finished somewhere about 1909.

Q. Now, Mr. Kennedy, it has been testified here that Mr. Ouderkirk put up the wood work of the coal-conveyor and that Mr. Ward put up the steel work on the conveyor?

A. We made an arrangement with Mr. Ouderkirk for to put up all the wood work, yes, and Mr. Ward put up all the mechanical arrangements, that is, the engines, towers, bridges and everything in connection with the coal plant.

Q. And under whose instructions?

A. After we got the plant, Mr. Ward was working in the shops, over in the shops, and [539—457] Mr.—I asked Mr. Muirhead if he would suggest anyone, if he knew of anyone who he thought would be capable of the erection and running of the plant.

Mr. DOUTHITT.—This is all hearsay.

Mr. STANLEY.—Under whose instruction was it, under whose instructions was Mr. Ward put in charge of the erection and superintendence of this steel work? A. Mr. Muirhead.

(Testimony of James Kennedy.)

Q. After consultation with you? A. Yes, sir.

Q. Now, Mr. Kennedy, after the plant was erected, what, if any, connection with the coal-conveyor had Mr. Ward?

A. After the coal plant was erected?

Q. Yes.

A. He was instructed that he was to take charge of the full running of that coal plant, that is, all the machineries and towers, of all the engines, there is two towers on the wharf, one tower in the coal-yard, and the trolley engine with the cable and pulleys and everything in connection with the mechanical appliances for running that coal plant.

Q. And was this his duty at all times or at special times?

A. That is when—only when steamers were coming in; that is, in advance it was his instructions that he would be notified, the shop would be notified when we got cable when the steamers would be in or about the time they would be in and his orders were to go down to the coal plant and go over everything to see that everything was in good running order so as to be ready at the steamer so as there would be no hitch or anything of that kind when a steamer come in; it was his orders to take charge of the unloading of that vessel so far as the coal plant is concerned and see that everything was in working order; then with the steamer, with the coal of course there was stevedores, to go down once in awhile and see that they were all working to the best advantage for the interests of the company, and then the ship had [540—

(Testimony of James Kennedy.)

458] to be shifted backward and forward for the trimming of the ship, to get the vessel moved so as to start, backward and forward and arrange for the moving of the vessels backward and forward.

Q. Were any instructions ever given by you or to your knowledge by any officer of the company to Mr. Ward that his duties were limited either partially or in the main to the coal ship that was discharging?

A. No, to the coal plant to the trolley work, the work above, looking after the ship that is incidental. Of course, another thing that he was to see this being a new appliance, new arrangement, the grabs going down in a ship to look out and see that we had not claims coming in from the ship for damage to the ship.

Q. In case of repairs being necessary to the coal-conveyor on who was that duty placed, the duty of making such repairs and seeing that the plant was in proper order put by the company?

A. Mr. Ward.

Q. Mr. Ward? A. Yes, sir.

Q. State whether or not when a coal ship was in whether Mr. Ward had any luna or foreman under him?

A. When Mr. Ward was not there, Mr. Akina, Akina, I have forgotten his exact name, he had charge of the running of that thing when Mr. Ward was not there. When Mr. Ward come down Mr. Ward assumed all the responsibility there, Mr. Akina under him.

Q. Mr. Akina under him?

(Testimony of James Kennedy.)

A. Under him, yes.

Q. Now, Mr. Kennedy, what connection, if any—I will ask you if you know Mr. Gedge?

A. What is that?

Q. Mr. Gedge?

A. Yes. You were perhaps speaking too loud.

Q. Do you know Mr. Gedge? A. Yes.

Q. Mr. Norman E. Gedge? A. Yes.

Q. He is the secretary and treasurer of the Inter-Island Company?

A. Secretary and treasurer of the Inter-Island [541—459] Steam Navigation Company.

Q. What duty, if any, has he, Mr. Kennedy, in connection with the coal-conveyor?

A. I had him to go down first when steamers came in so as he would meet the captain and make arrangements in connection with the ship and notify them about our plans in connection with our wharfage charges and get things started, that was as far as getting entered at the custom-house and other things. He was there to see what was going on, to go down there and to report to me just what was going on, to keep me posted of things that were going.

Q. Had he any authority from the company, Mr. Kennedy, to direct what repairs should be made?

A. What is that?

Q. Had he any authority from the company or from yourself to direct what repairs should be made?

Objected to as incompetent, irrelevant, immaterial and leading.

Objection sustained.

(Testimony of James Kennedy.)

Q. What if anything, Mr. Kennedy, had Mr. Gedge, what authority, if any, Mr. Kennedy, had Mr. Gedge with regard to repairs being made?

A. Absolutely none.

A JUROR.—Mr. Kennedy, did Mr. Muirhead have anything to do with the repairs being made down there?

A. It was all made by Mr. Ward, whatever Mr. Ward wanted he could make, send his orders in and they were all executed.

Q. Mr. Muirhead didn't have anything to do with that?

A. Mr. Muirhead had the whole thing, it was in his hands. If he sent orders up to the shop they were filled, if he sent orders to the Irons Works they were filled, they were O. K.'d and passed in.

Q. Was Mr. Ward responsible to Mr. Muirhead for the condition of that conveyor at all times?

A. He was sent down by Mr. Muirhead to take full charge of the coal-conveyor and there was [542—460] nobody to bother with him.

Q. Mr. Muirhead, then, was not responsible for any of the conditions that prevailed down there?

A. No, no, no, Mr. Muirhead was the man who was put there to be entirely responsible.

Q. Who?

A. Mr. Muirhead—at least Mr. Ward.

Q. Then Mr. Muirhead had nothing to do with the coal-conveyor?

A. No, he had nothing to do with the coal-conveyor, not at that time.

(Testimony of James Kennedy.)

Mr. STANLEY.—What?

A. Not at that time, he had put Mr. Ward alone. Not at that time, he had after Mr. Ward left. When Mr. Ward was off. He was away for some months.

Mr. STANLEY.—And do you know whether or not Mr. Muirhead visited the coal-conveyor from time to time?

A. I don't think he—I didn't see him, very seldom down there, very seldom.

Mr. STANLEY.—Now Mr. Muirhead I will ask you if as a matter of fact you visited the coal-conveyor from time to time?

A. I was down there from twice to three or four times a day, twice at least, sometimes oftener, depending on what was going on.

Q. And I will ask you, Mr. Kennedy, whether or not you have ever seen the cable off the pulleys or off the track? A. Quite frequently.

Q. When you say quite frequently what do you mean?

A. In fact I don't know that I have ever seen a ship in there without the cars coming off. They come off almost every time, we always look for them coming off at any time.

Q. I see, and at what parts of the coal-conveyor have you seen the cable off?

A. I have seen it come off at all points, at the both extreme ends, the curves, see it come off on the straights.

Q. By the straight what do you mean?

A. That is on the straight — there along the

(Testimony of James Kennedy.)

straight line not at the curve but [543—461] at the straight line.

Q. That is between the different curves?

A. Between the different curves, yes.

Q. And you say you have seen it at all the curves?

A. I have seen the car off at all the curves.

Q. Does that include the makai curve?

A. Yes, all sides, makai side and every side.

Q. And how often have you seen it, Mr. Kennedy, off the makai curve?

A. Oh, I could not tell you, I could not keep track of it.

Q. Was it seldom or frequently?

A. It was frequently, quite a number of times.

A JUROR.—When you refer to it coming off on the straight-away track do you mean the cars coming off? A. The cars coming off, yes.

Q. And the car is attached to the cable—how is the car attached to the cable, Mr. Kennedy?

A. There is a shoe there that the rope runs in and it is screwed down to catch it.

Q. And when the car would come off the track with the cable attached to it where would the cable come? A. The cable would come with it.

Q. Is it the car that would come off the curve or the cable? A. On the straight?

Q. On the curve?

A. The car comes off and brings the cable with it.

Q. The car comes off and brings the cable?

A. I don't know which it is, but it comes off, they come off, I don't know which way it is.

(Testimony of James Kennedy.)

Q. They both come off together?

A. They both come off together. [544—462]

Mr. STANLEY.—I will ask you what has been the condition at the place where the cable has come off the pulleys or the track?

A. Just repeat that again.

Q. What has been the condition where the cable has come off either the pulleys or the straight-away track? A. The condition?

Q. Yes. A. I don't understand you.

Q. I don't want to lead you. A. No.

Q. Describe what you saw, what you have seen on these occasions when you have seen the cable off the pulleys or off the straight-away track.

A. Well, I have seen it in some cases where there were double cars, cars in front of it, but I have seen it when there were obstructions on the track and I have seen it without these. I have seen it come off without anything being in the way.

Q. Now, Mr. Kennedy, I will ask you if loaded cars—if you have ever seen loaded cars going on the Ewa track? A. On the Ewa track.

Q. The towers being on the Waikiki side?

A. Certainly.

Q. Now, under what conditions—this was prior to Mr. Ward's accident; under what conditions would loaded cars be sent up on the Ewa track?

A. They would simply go along on that track the same as they would go on the other one.

Q. What operation would the company be per-

(Testimony of James Kennedy.)

forming when they would send loaded cars upon the Ewa track?

A. We have chutes on this side when a vessel is unloading it and when our steamers would come in or get coal at this other end. Of course the coal has got to go away around and be unloaded to get coal here.

Q. You would have a foreign ship discharging coal here? A. Yes, sir.

Q. When you refer to our steamers what do you mean?

A. Inter-Island [545—463] steamers.

Q. Would they be loading or discharging coal?

A. They would be taking the coal on.

Q. Taking the coal on? A. Yes, sir.

Q. And under the circumstances where would the coal come from with which those ships of yours would be loaded?

A. Well, we were picking it up in the yard, it was a different kind of coal from which the ship was discharging.

Q. You picked it up in the coal-yard?

A. Yes, sir.

Q. And where would the cars be loaded?

A. Over in the yard at the trestle work.

Q. In the coal-yard? A. In the coal-yard.

Q. And the only way they could go they would be sent down the Ewa track? A. Yes, sir.

Q. And around to your steamer which would be ahead of the foreign ship? A. Yes, sir.

A JUROR.—Mr. Kennedy, wouldn't the same coal

(Testimony of James Kennedy.)

sometimes be taken on? A. Oh, yes.

Q. Discharged by the towers?

A. Oh, yes, the coal coming out of the steamer would often go into our own ships, also, it is just a question what kind of coal we want our own ships to take.

Q. When the cars would go off the track on the same line of track the cable went off with it?

A. Yes.

Q. Would they have to disconnect the car with the cable to get the cable back onto the pulleys again, or would you take and lift your box?

A. That was the orders invariably when a car got off. I didn't stay around because I thought the men were enough to get the car on and I didn't like to be around and I could only clear out so as to leave them alone to do it themselves. Sometimes a fellow standing around there makes them nervous and excited and I always cleared out.

Q. You don't know if the box was lifted?

A. The box has [546—464] got to be lifted.

Mr. STANLEY.—The juror is asking you what you know. You don't know anything about it?

A. No, I don't know about it at all.

A JUROR.—You don't know then if they had to lift the box then to get the cable on if a car run off on the straight track?

A. I know this, that I have been around there at the beginning and heard Ward send the men immediately to hoist the box. I know that much and I cleared out, but that is about the first thing that is

(Testimony of James Kennedy.)

done to get the box up by Mr. Ward's own orders.

Mr. STANLEY.—You have been present when you heard Mr. Ward give those orders?

A. Yes, sir.

Q. But as to what orders were given Mr. Ward you don't know personally? A. No.

A JUROR.—That is on the Ewa track I am asking about, the Ewa track, the straight line of track, you would have to lift that box to get the cable on the track when it is off the Ewa side. Have you ever seen that, how it was done? A. No.

A JUROR.—He stated that he had seen the cable off the straight track. I wanted to know if he had to raise that box to get that cable on again?

A. What is that?

Mr. STANLEY.—Do you know, Mr. Kennedy?

A JUROR.—You stated that cars were off the straight portion of the track and the cable goes off with them; do you have to lift this box to put that cable back on the track?

A. On the straight track?

Q. On the straight track? A. I don't know.

Q. On the Ewa side?

A. I don't know really, whether you would have to do it on the straight track or not.

Q. You don't know? A. No.

Mr. STANLEY.—Now, Mr. Kennedy, I will ask you if at any time [**547—465**] you have been present when an experiment has been made to show what the effect has been at the makai end of the coal-conveyor of lifting the weight; of stopping the

(Testimony of James Kennedy.)

engine, lifting the weight and taking the grips off the cars?

A. Well, the cable will fall flat down between the rollers, between the cars right along, all the way along.

Q. Up to what point?

A. Up to the point to as far as there was this gangway and even along this way along the waterfront.

Q. Prior to that being done, prior to the engine being stopped and the weight lifted and the grips being taken off what was the condition of the cable as to being slack or taut? A. Taut.

Q. And within what space of time, Mr. Kennedy, after these various operations have been performed would you see the cable slacking onto the track?

A. The moment they begin to hoist the box it shows.

Q. Was it gradually?

A. Oh, it begins just gradually until the box comes up the full length.

Q. And within approximately what space of time would you find the cable sagging on the ties between the rollers? A. What is that?

Q. Within approximately what space of time would you see the cable sagging on the ties?

A. From what point?

Q. Say the makai side?

A. Yes, but from where are you going to begin the time from until you see the rope sagging?

Q. From the time the order has been given to stop the engine, to lift the weight?

(Testimony of James Kennedy.)

A. Oh, I don't suppose more than a couple of minutes.

Q. Are you familiar, Mr. Kennedy, with the operations going on on the waterfront in the way of tallying coal and sugar and so forth on the waterfront of Honolulu? A. Yes, sir.

Q. Assuming, Mr. Kennedy, that Mr. Ward is injured to such [548—466] an extent that he has—that he walks on crutches, that his sight and hearing are affected to some extent, but he is capable of reading ordinary receipts like these I hand you, Plaintiff's Exhibits "B" and "C," without difficulty?

A. I don't catch—

Q. I have not finished yet. And assuming that his hearing is affected to some extent, does not prevent him from hearing ordinary conversation and that he is able to sit down and with those exceptions is practically all right; do you know whether Mr. Ward would be capable of doing the work as a tallier of sugar or coal or anything of that kind on the wharf?

A. Yes, sir.

Q. Do you know of any other position that Mr. Ward could occupy?

A. Oh, he could work in a machine-shop, that is, as far as keeping time checks and having a sort of half supervision over the men at work.

Q. How about the coal-yard?

A. Yes, I could give him a position in the coal-yard as coal-weigher.

Q. Now, what wages, Mr. Kennedy, if you know, do these talliers of sugar et cetera and other things

(Testimony of James Kennedy.)

command in this port?

A. I believe four dollars a day is what the sugar talliers get.

Q. And what wages are paid in the coal-yard of your company?

A. Coal-weighers from twenty-one to thirty-five dollars a week.

A JUROR.—Do you pay your talliers by the month or day? A. The week.

Q. Work or no work, they are paid?

A. Yes, they are paid for the week and paid for overtime Sundays or a holiday.

Q. A time and a half for overtime?

A. Yes, sir; it is more than that. **[549—467]**

Cross-examination of JAMES A. KENNEDY.

Mr. DOUTHITT.—You were not here at the time that this accident occurred, Mr. Kennedy?

A. Which accident?

Q. To Ward?

A. I was not here when Ward got hurt, no, I was in Europe, I believe, on that date.

Q. And had been away for how long?

A. I think in May sometime, the middle of May of that year, and got back about August, sometime in August. Hold on, that is another time. When did this occur; what year was it, was it 1912—Ah, yes, that was the time I was away in Europe.

Q. Before that time, Mr. Kennedy, you were down at the coal-conveyor, you say, three or four times a day?

A. I said twice a day, sometimes three times.

(Testimony of James Kennedy.)

Q. And sometimes four times?

A. Yes, sir; and sometimes more than that.

Q. Ward was the foreman in charge?

A. Yes, he was the man in charge of the coal plant, yes.

Q. Akina was a luna down there, wasn't he?

A. He was under Ward, yes.

Q. And he had men under him? A. What?

Q. Akina had men under him?

A. He had, yes, that is he had—of course, because when Ward was up in the shop Mr. Akina was there, when Ward was not there Akina had charge of the men.

Q. Had charge of the men? A. Of the men.

Q. And Akina had directed these men when Ward was there, directed the men about the coal-conveyor, didn't he? A. I don't know.

Q. How is that?

A. No, not to my knowledge.

Q. Well, what was Akina doing then?

A. What was he doing? [550—468]

Q. Yes?

A. He was looking after the men, looking after the cars, getting coal out, seeing everything was kept moving.

Q. Well, Akina, then he was the boss or luna of the coal-conveyor, directing these men?

A. Not unless—no, George Ward had full charge when he was down there.

Q. I understand, but when George was down below watching the grip so that it did not injure the skin

(Testimony of James Kennedy.)

of the ship, Akina was directing the operations of the coal-conveyor, was he not?

A. I don't know, I don't think so, I don't know

Q. Well, what was he doing, Mr. Kennedy?

A. He was working.

Q. Don't you know that he was paid as luna or boss over the gang of men on the top of this coal-conveyor? A. Yes, he had other work as well.

Q. I know, he did, but he saw that the coal was being taken out of the hoppers and directed the men on top of the coal-conveyor, didn't he?

A. They didn't need any direction, the men were all stationed and they had their own duties to perform.

Q. Ward was down aboard the ship, was he?

A. Once in awhile he was.

Q. Don't you know, Mr. Kennedy, that Ward's principal duty was aboard the ship to superintend the discharge of the coal from the hold of the vessel?

A. Far from it.

Q. Far from it? A. Yes, far from it.

Q. And his work, then, was principally where, on top of the coal-conveyor or on the ship?

A. He was not weigher either place, you asked if Mr. Ward was a weigher on the coal plant on the ship.

Q. I didn't ask you about a weigher.

A. Not quite so loud, the echo seems to be back of it.

Q. Ward, then, was practically where, on this coal-conveyor? [551—469]

(Testimony of James Kennedy.)

A. All over the coal-conveyor.

Q. All over the coal-conveyor? A. Yes.

Q. And Akina was up on this coal-conveyor, too?

A. Yes.

Q. He didn't go down in the ship, did he?

A. I don't know if he did.

Q. You were down there every day, were you not?

A. Yes, but he might not go down when I was there.

Q. How is that?

A. He wouldn't go down there when I was there, possibly he might be.

Q. But you have never seen Akina go down in the ship?

A. I could not recollect just now; I cannot place him; he may have been, but I cannot place him in my mind just now.

Q. But, so far as your observation was concerned, and you went down there, as I understand, every day— A. Yes.

Q. And sometimes as many as three to four times a day? A. Yes.

Q. When coal ships were in and you had never seen Akina leave the top of the coal-conveyor and go down into the hold of the ship?

A. Not that I remember. I have seen him all over the coal plant, but I cannot say that I have seen him down on the ship.

Q. And while Ward was down in the ship, Akina directed the operations up on the top of the coal-conveyor, didn't he?

(Testimony of James Kennedy.)

A. They were moving along without any direction.

Q. How is that?

A. They were running along, if anything happened he would call Mr. Ward.

Q. If anything happened he would call Mr. Ward?

A. Yes, if Mr. Ward—

Q. And there was a necessity—

Mr. STANLEY.—What were you saying, Mr. Kennedy, when you were interrupted?

A. I don't remember.

Q. You were saying, if Mr. Ward when you were interrupted, and what were you going to say?

A. It will come back to me perhaps, I don't remember now. [552—470]

Mr. DOUTHITT.—And then there was no necessity while the coal-conveyor was in operation, Mr. Kennedy, for anybody giving any directions on top of the conveyor?

A. Not when everything was working all right.

Q. The men at their different positions on the coal-conveyor? A. Yes, sir.

Q. And work went along? A. Yes, sir.

Q. And no necessity for getting any orders by anyone?

A. No, not when things were going all right, certainly not.

Q. And it was only a matter, then, as I understand you, of seeing that these hoppers were working and that the coal was being carried in towards the coal-yard and that the empties were returning in the usual course of business?

(Testimony of James Kennedy.)

A. I did not catch that.

Q. Then it was only a matter, Mr. Kennedy, of seeing that the men, I mean on the top of the coal-conveyor, of seeing that the hoppers were being discharged of their coal and that the coal-cars were being conveyed over to the coal-yard and the empties returning? A. Yes, sir, practically.

Q. In order that the work should go on?

A. Go on smoothly.

Q. That was all that was necessary to be done up there? A. Yes, sir.

Q. And these men undertook this business because they were employed for that purpose?

A. Yes, sir.

Q. And when the coal ship was not in Akina was the one that had full charge of the coal plant?

A. Well, he had the run of it, yes.

Q. Well, now, Mr. Muirhead didn't have anything to do with the coal plant, did he?

A. Well, of course, he had the general—he was—he appointed Mr. Ward and I suppose he took a general oversight over it.

Q. You suppose so. Did you ever see him down there at [553—471] that coal-conveyor?

A. Oh, I have seen him, yes.

Q. Didn't you testify on your direct examination that you had never seen him down there at that coal-conveyor?

A. No, I didn't say that.

Mr. STANLEY.—One moment; I object to that.

Objection sustained.

(Testimony of James Kennedy.)

Mr. DOUTHITT.—Did you ever see Mr. Muirhead down there during the unloading of coal vessels?

A. Oh, I have seen him down there. I have not seen him up on the plant, but I have seen him down below and I have seen him around the marine railway and around that way. I have seen him up on the platform, but not often.

Q. It is a matter of very rare occurence that you have seen Mr. Muirhead down there at that coal-conveyor while coal-ships were in?

A. I could not say that. When I go down I don't stay. I simply go down and if I find everything going all right I simply go right back; I don't stay around there.

Q. But during the times that you were there. I understand that you were there sometimes four or five times a day?

A. Of course, you will soon have it up a great deal more.

Q. No, I am quoting you exactly what you said. Were you not down there four or five times a day sometimes?

A. Oh, I may have been down as many as that.

Q. And you were down there during the day three or four times or two or three times, were you not?

A. Well, the question is when?

Q. During the time the coal boats were deing discharged of coal?

A. Not so much then as at other times. Sometimes more at other times, because Mr. Gedge was

(Testimony of James Kennedy.)

around there and reporting to me every hour what goes on.

Q. Mr. Gedge is there and reports to you every hour what goes on?

A. He goes down and he gets statistics of the amount of coal coming out and he lets me know. **[554—472]**

Q. What was Gedge doing down there?

A. He was just keeping tally, watching the coal; he was not there all the time, either; he was just down backward and forward at other times than myself.

Q. Just taking the—

A. The record.

Q. The record of the work as it was going on?

A. Report of the work as it was going on.

Mr. STANLEY.—Louder.

A. He would make report of the number of tons that was coming out of the vessel and sometimes there would be a notice that the coal-car was off the track or something was the reason for not having so much that hour as the hour before.

Mr. DOUTHITT.—He was down there to tally the coal, to take account or record of the coal as it was taken from the coal-ship and dumped in the coal-yard?

A. No, he simply made a memorandum from the coal-weigher's book, by weight and we tried to get them hourly records.

Q. That was merely in a clerical capacity that he

(Testimony of James Kennedy.)

was there? A. Yes, sir.

Q. Nothing else? A. That is about all.

Q. The merest clerk up there in the office of the Inter-Island Steam Navigation Company, Mr. Kennedy, could have gone down there and done the same work as Mr. Gedge? A. Oh, yes, just the same.

Q. You had delegated this clerical duty to the secretary and treasurer of the Inter-Island Steam Navigation Company?

A. He goes down there, he went to different places.

Q. Did you delegate that duty to him?

A. Delegated the same as he has all the other places. He has that understanding that he is to go around and report.

Q. I am asking you about this particular coal-conveyor? A. Yes. **[555—473]**

Q. Now, you sent the secretary and treasurer of the company down to the coal-conveyor for the purpose of checking coal?

A. Not for checking coal at all. No, he was to go down instead of my going down. He would go down to find out how the thing was progressing.

Q. If you were not there who would he report to?

A. If I was not there he would report to nobody.

Q. To no one? A. No.

Q. You were the only one that he was to report to? A. Yes.

Q. Now, it was a very rare occurrence, so far as your observation went, Mr. Kennedy, that you saw Mr. Muirhead down there at that coal-conveyor

(Testimony of James Kennedy.)
while you were there?

A. Well, it was around that way, yes, but he was not so often there, that is I didn't see him so often as I was down there myself.

Q. And it was very rare as I understand, even when you were down?

A. Rare, it is just a question of what rare means.

Q. It was not every day, was it?

A. Well, some days I didn't see him, other days, yes.

Q. It might go a week when you would not see him there? A. Not when a ship was in.

Q. I thought you said a moment ago that he was not in the habit of going down there when a ship was in? A. I didn't say that.

Q. Were you in the habit of going down there when a ship was in? A. Yes.

Q. But you didn't see him there when a ship was in?

A. Oh, yes, I have seen him there when a ship was in.

Q. You have never seen him on top of the coal-conveyor, did you when a ship was in?

A. I don't know whether it was when a ship was in or was not in, because I was taking no special record of the thing.

Q. Muirhead's business was up there in the shops of the company [556—474] on Queen Street and River Street, wasn't it, didn't his duties call him there?

A. That is his office, but I have gone oftener over

(Testimony of James Kennedy.)

there and not found him there than perhaps down at the ship, down at the coal-yard.

Q. You have testified here, Mr. Kennedy, that Ward—that that entire operation of that coal-conveyor had been given over to Ward?

A. So it was, yes.

Q. Now, will you please tell us in the absence of anything wrong down there, why it was that Mr. Muirhead, who had nothing to do with the running of that coal-conveyor would be down there?

A. Down there to see what was going on.

Q. Just from mere idle curiosity?

A. Just the same as he would go around the steamers to find out there himself, to keep himself posted.

Q. Mr. Kennedy, what was there to be posted about if Mr. Gedge was there and Mr. Ward was the foreman in charge of the entire work?

A. Mr. Gedge was not reporting to Mr. Muirhead, he was reporting to me.

Q. What is that? Gedge was reporting to you?

A. Yes. Muirhead never came in and reported to me at all, that is, he was doing it for his own satisfaction.

Q. Who did Ward report to?

A. To Mr. Muirhead.

Q. To Mr. Muirhead? A. Yes.

Q. Well, then, how can you explain the fact that if his duties were up there in the shops of the Inter-Island Company and if Mr. Muirhead had nothing to do with the running of this conveyor, why it was that Muirhead was down there on the conveyor?

(Testimony of James Kennedy.)

Objected to. Question withdrawn.

Mr. DOUTHITT.—Mr. Muirhead, while coal-boats were in had delegated, as I understand, full authority over the coal-plant to Mr. Ward?

A. Mr. Ward had full charge of the coaling-plant. **[557—475]**

Q. In pursuance of your instructions?

A. Well, it was mutual understanding between us, that was with my consent and approval, yes.

Q. With your consent?

A. My consent and approval, yes.

Q. I understand, but you were the guiding spirit, we will say, down there; you were the president and general manager of the company and Mr. Muirhead would obey your instructions?

A. Oh, I suppose, if I had told him to appoint somebody else he would have done it.

Q. He would have done it? A. Yes.

Q. And it was in pursuance of the mutual understanding between you and Mr. Muirhead that Ward, while coal-boats were in, had the sole and exclusive charge of the coal-conveyor?

A. Yes, of all mechanical appliances about that coal-conveyor.

Q. The mechanical appliances on the coal-conveyor? A. Yes.

Q. Is that all that he has charge of.

A. I don't know just what you mean by that.

Q. You say that he has charge of the mechanical appliances of the coal-conveyor? A. Yes.

Mr. SUTTON.—He testified that he had charge

(Testimony of James Kennedy.)

of the entire coal-conveyor and mechanical appliances.

Mr. DOUTHITT.—At any time there were any repairs or drums put in down there by Mr. Ward, that fact was reported to Mr. Muirhead, was it?

A. That I don't know.

Q. You don't know? A. No.

Q. Have you ever seen that cable come off a straight track? A. I have seen the car come off.

Q. The car come off? A. Yes, sir.

Q. Due to what?

A. That is what I don't know.

Q. You don't know?

A. I don't know the reason why. **[558—476]**

Q. You don't know the reason why? A. No.

Q. These tracks and the whole conveyor were built pursuant to the plans and specifications of the C. W. Hunt Company of New York, were they not?

A. I presume so.

Q. Don't you know, Mr. Kennedy?

A. Mr. Ward got the plans and specifications and put that thing up and he put it all up himself.

Q. Didn't you order it yourself?

A. I ordered the plant made, yes.

Q. You ordered the plant made? A. Yes.

Q. And you ordered it made by the C. W. Hunt Company of New York? A. Yes.

Q. And the whole plant was constructed according to the plans and specifications as sent to you, upon the specifications and the plans sent?

A. I presume so, I didn't look it over. Mr. Ward

(Testimony of James Kennedy.)

had full authority to go ahead and put that up and as a practical man I had confidence in his ability to do it.

Q. He did put it up, too, didn't he?

A. Evidently.

Q. And there was never any objection made so far as this conveyor is concerned, that it was not according to the plans and specifications, was there?

A. No.

Q. You don't know what made the car come off the track on a straight track, do you?

A. Oh, there might be several reasons for it.

Q. Might be, but do you know?

A. No, I don't; I cannot tell you the reason.

Q. And when was it that you saw those cars come off a straight track? A. Oh, I don't remember.

Q. Were they loaded or unloaded?

A. I have seen them loaded and unloaded.

Q. Both? A. Yes, sir.

Q. Was it a very common occurrence to see the cars come off **[559—477]** the track while it was running on a straight track?

A. Yes, it was, but they didn't so often come off by a long way of the straight track as they did off the curve; they more frequently come off the curve.

Q. Don't you know that the track on this coal-conveyor, Mr. Kennedy, was so constructed according to the patent of the C. W. Hunt Company, the flanges of the wheel on the tracks that the cars would run just the same on the curve as it would on the track, don't you know that?

(Testimony of James Kennedy.)

A. I presume that is so.

Q. Don't you know that is a fact?

A. I don't know that it is a fact.

Q. Well, you received the catalogues, plans and specifications sent you by the C. W. Hunt Company?

A. Yes, sir, I received the plans and specifications.

Q. And those plans and specifications and catalogues sent by the C. W. Hunt Company along with the plans and specifications showed, did they not, that the cars could be operated upon a curve just the same as it could on a straight track, in pursuance of an invention of the C. W. Hunt Company?

A. No, I don't know that.

Q. You don't know that? A. No.

Q. Don't you know, Mr. Kennedy, that they are protected from coming off the curve by means of a flange in the track itself on the outer circumference and a flange on the inside of the wheels or on the car as it goes over?

A. Which is that; I didn't catch that?

Q. Don't you know, Mr. Kennedy, didn't you know at the time that these cars were prevented and the catalogues show and the plans and specifications show and the construction of the tracks show that the cars were prevented from coming off the circular head of the coal-conveyor by means of the construction of the track, the plans being on the outer circumference of the **[560—478]** track and the wheels instead of riding on the rail would ride on the flange, didn't you know that?

Objected to as incompetent, irrelevant and imma-

terial and not proper cross-examination.

Mr. DOUTHITT.—The times that you say that you saw the cars off the track how many cars were running around? A. Running around?

Q. Yes. A. I don't know, I could not tell you.

Q. How many cars did you see at the circular head?

A. I didn't keep any tally, I could not say how many.

Q. You don't know whether there were two or three cars bunched up there?

A. No, I have seen cars bunched up there.

Q. Did you see the cable leave or the cars leave the track when there were two or three cars bunched up?

A. I have not seen it at that time; I have seen them when they were off; I have not seen them coming off.

Q. And as a matter of fact you have never seen the cable leave this makai end, have you?

A. I have seen it when it was off.

Q. When was that?

A. I could not tell you the date; I was not taking a note specially of any of these things. These were things I speak of, occurrences and I made no note. They were things of frequent occurrence.

Q. Was it a frequent occurrence, Mr. Kennedy, to have that cable come off on the makai end?

A. It came off there as frequently as any other place.

Q. Don't you know it came off in your coal-yard

(Testimony of James Kennedy.)

due to the falling upon top of the tracks of lumps of coal?

A. I knew it came off on the coal-yard and all over.

Q. That is the place where it frequently came off?

A. Where?

Q. In the coal-yard.

A. I don't know. [561—479]

Q. How many times have you seen that cable off there at the makai end?

A. I cannot tell you, I didn't make a note of the times. It has been running now for five years. I made no note of it. I could not tell you.

Q. How long would the cable be off before it was replaced at that end? A. Oh, I could not tell you.

Q. Have you any record of the installation of new cables? A. No.

Objected to as not proper cross-examination. Objection sustained.

Motion to strike the answer. Motion granted.

Mr. DOUTHITT.—Mr. Kennedy, have you not as a matter of fact observed that on this coal-conveyor when the engine is stopped and the cable is at rest, have you not seen the sag between the pulleys, is there not a perfectly natural thing to be a sag between the rollers?

A. I have never seen it, not when the cars were moving or the thing is standing still unless the box or counterbalance is lifted up.

Q. Have you ever seen—did you ever know of a wire rope or anything between two points which did

(Testimony of James Kennedy.)

not sag in the middle?

A. That depends upon what you mean by sag, there is a natural and certain amount, that is all.

Q. A certain amount of sag?

A. Between the pulleys, yes.

Q. A sag down between the rollers?

A. Slightly, yes.

Q. Then there was as you observed, there was a sag between rollers?

A. Well, it is not taut, no, there is a tremendous pull if those cars are pulling the rope or the rope is pulling the cars there is a difference, if that is what you mean by a sag.

Q. That is just exactly what I mean by a sag. You know what I mean by a sag. For example you can look right out there and see the telephone wires, that is what I mean by a sag?

A. Yes, but then they were hitched to the other pole and they [562—480] were loose around. There would be a sag too if they were down near the ground.

Q. How is that?

A. It would be sag, too, if it was down, near the ground.

Q. Of course there would be a sag. There was a sag between pulleys and necessarily had to be a sag as it went over like that between the rollers whether you lifted the box or whether you didn't lift the box, is not that a fact, is not that a physical fact?

A. It is a fact that there is a slight sag but of course there is—it is absolutely true that there is a

(Testimony of James Kennedy.)

slight sag according to the amount of tension on the wire you are putting, the greater tension on that and the sag is less; if you let go that tension the thing will drop down as far as it will go.

Q. Of course, that is exactly it, when you took the tension off you could see the sag between rollers?

A. The tension, that is when you lift the box up.

Q. No. A. Which tension?

Q. When the cable was not being used, when it was not conveying the cars along on the track?

A. A very slight grip?

Q. Ungripped? A. On the grip?

Q. Ungripped?

A. Oh, ungripped, there would be a slight sag.

Q. There was a slight sag?

A. A very slight sag, yes.

A JUROR.—Mr. Kennedy, when Mr. Gedge reported to you that the cars went off the track he reported that on account of the delay in unloading the ships?

A. That is when the total fell down a certain order then simply there is a car off the track.

Q. If it was reported about the cable coming off?

A. It was reported and reasons for this slowing up especially at the beginning of the discharge. **[563—481]**

Q. Did you ever have occasion to observe what the particular sag—what particular sag there was when the cars were ungripped and the weight was not raised?

(Testimony of James Kennedy.)

Objected to as indefinited, uncertain and unintelligible.

Mr. DOUTHITT.—The sag between rollers?

Mr. SUTTON.—Do you mean the amount of sag?

Mr. DOUTHITT.—I mean the sag, the amount of sag, the extent of the sag.

A. Unless the cable is ungripped the shoes come higher up and lift the cable above the roller and it wouldn't come down and perhaps it wouldn't touch the rollers.

Q. That is with a car going over it the cars are constantly stopped, the thing all hooked up, there is no possibility that the thing would even touch the rollers? A. Yes.

Q. That is true but when the cars are ungripped, Mr. Kennedy, and without raising the weight at the box— A. Yes.

Q. There will be a slight sag as you have testified between the rollers, will there not, a little sag of the cable between rollers?

A. That is what I said, a very slight sag.

Q. How much is that sag, have you attempted to see what it was? A. I have not measured it, no.

Q. You have not measured it? A. No.

Q. Do you know the purpose of those rollers?

A. Which?

Q. Do you know the purpose of those rollers being put up there on that coal-conveyor?

A. I can guess at it.

Q. You know the plans and specifications, don't

(Testimony of James Kennedy.)

you, and are familiar generally with that coal-conveyor?

Objected to as not proper cross-examination. Objection sustained.

Mr. STANLEY.—What was Mr. Muirhead's connection with the Inter-Island Company?

A. He was superintending engineer.

Q. In charge of what?

A. In charge of all the steamers, all the material, all the engine rooms and the hoisters and [564—482] windlasses in connection with them.

Q. Do you mean the general operations of the company?

A. The general operations of the company as far as machinery is concerned.

Q. And kept his office in the machine-shop?

A. His office was in the machine-shop. [565—483]

In the Circuit Court of the First Judicial Circuit, Territory of Hawaii.

JANUARY TERM, 1914.

GEORGE E. WARD,

Plaintiff,

vs.

INTER-ISLAND STEAM NAVIGATION COMPANY,

Defendant.

June 12th, 1914.

[Testimony of J. M. Young, for Defendant.]

Direct examination of JOHN M. YOUNG, called for the defendant, sworn.

Mr. SUTTON.—Your name, please?

A. John M. Young.

Q. Mr. Young, how old are you? A. Forty.

Q. What is your business?

A. Consulting engineer.

Q. Are you connected with the Pacific Engineering Company? A. Yes.

Q. What is your connection to that company?

A. President and chief engineer.

Q. Are you connected in any way with any other corporation or institution in Honolulu?

A. I am connected with The College of Hawaii.

Q. What is your connection?

A. Professor of engineering.

Q. Where did you receive your education, Mr. Young?

A. At the University of Florida and at Cornell University.

Q. What degrees, if any, do you hold?

A. I hold bachelor of sciences in engineering, mechanical engineering and **[652—570]** master of mechanical engineering and civil engineering.

Q. And what has been your work along the line of your education, briefly outlining the course of your activities since you attended school?

A. Well, my engineering work was divided. I had a number of years practical experience before going to college and that was continued after college.

(Testimony of J. M. Young.)

Q. What is the nature of that experience? Just a little louder, Mr. Young, and turn a little bit towards the jury?

A. In mechanical engineering, civil and electrical engineering, embraced shop work, construction work and operation of machinery plants.

Q. What kind of work is this that you are engaged in?

A. In mining and—I mean the engineering work connected with mining such as the installation and operation of machinery, the designing of machinery.

Q. In your mining work have you had any experience at all in the use of the cable systems?

A. Yes, sir.

Q. Systems where a cable is used? A. Yes, sir.

Q. Describe what the nature of that work was and your connection with it?

A. Well, that work was from about 1892 up to '96, and embraced the direction and installation of cable ways, the operation of cable-ways, the repair and such work as was necessary in connection with cable ways, quite a number of different systems.

Q. What type of cable-ways were these of which you speak?

A. Those were the cable-ways used for surface mining in the Phosphate Mining District of Florida, then at later times from 18—from 1901 up to 1908, I was engaged in connection with machinery such as coal-conveying systems, for instance the Robinson system, the Hunt system and other systems of similar nature.

(Testimony of J. M. Young.)

Q. In what places were these systems of which you speak?

A. The head office of the company with which I was connected [653—571] was in New York and most of the designing work was done there. The cable-ways themselves were installed at various points such as Long Island City, Hartford, Connecticut, Detroit, Michigan, Stallway, Michigan, Paterson, New Jersey and at isolated points where cables were installed; there was another one at Colorado, which was used for conveying coal.

Q. How did those cable systems compare with the —have you examined the coal-conveyor system belonging to the Inter-Island Steam Navigation Company, Limited, in Honolulu? A. Yes, sir.

Q. You are familiar with its construction and make and operation? A. Yes, sir.

Q. How does this system belonging to the Inter-Island compare with the systems concerning which you have just spoken in general features?

A. Well, it is the same as the Hunt system, that is the Hunt system, it is the same installation that was put in at Detroit by the Detroit-Edison Company, at Del Ray, it is just the same system.

Q. In size number of cars and capacity, how does this plant compare with the plant of which you have spoken?

A. Some larger and some smaller. Most of the other plants were in connection with larger power-houses and the tonnage of coal handled was probably about the same as this plant handles, but this plant

(Testimony of J. M. Young.)

handles it in bunches you may say, it has periods of extreme activity and other periods it is idle. But in the large power-houses, you understand, the operation is continuous. The aggregate tonnage about the same but handled over a continuous period.

Q. Have you ever had any connection with the United States Navy? A. Yes, sir.

Q. State what connection that was.

A. I was in the steam engineering department of the navy during the Spanish War.

Q. What, if any, was your rating?

A. I was rated as **[654—572]** machinist, first class.

Q. State whether or not there is any higher or— any higher grade of rating as machinist. A. No.

Q. What are the requirements for attaining a rating of machinist, first class in the United States Navy?

A. Well, to get that rating a man must be a good all round machinist, he must be able to do a first class job, do it quickly and not spoil any material, be able to handle all the machines in the shop.

Q. Does that rating apply to machinery of any particular class, that is, the capacity of that person holding that rating for handling any particular type of machinery?

A. Well, he has first to be able to handle any machinery in the shop. Of course the men are divided up in accordance with any special ability they may have but in general a first class is able to handle any

machine in the shop and do a first class job on it at any time.

Q. How long did you hold this position in the United States Navy?

A. I was in the Navy from April to October, that is the Navy Department.

Q. Of what year? A. 1898.

Q. And from there where did you go, to which of these operations of which you have spoken, if any?

A. Well, from there I went to the University of Florida to take charge of the department of physics. I had been appointed in charge of the department and went from the Navy shops to the State College or University.

Q. Have you been connected with any other educational institution in the line of your education?

A. Yes, sir.

Q. State what other educational institution.

A. I was connected with the department of experimental engineering at Cornell from 1902—1902.
[655—573]

Q. What was the nature of your connection?

A. I was in charge of the testing laboratories involving the use of a large number of testing machines and tests of practically all kinds, engineering appliances and machinery of a very wide range, the strength of materials, belting engines and things of that kind.

Q. What was your connection, if any with these various conveyor systems of which you have spoken?

A. Well, as engineers we were interested in select-

(Testimony of J. M. Young.)

ing the conveying system which would be most suitable for the purpose, that is the system which would handle the coal in the largest quantity and at the lowest price and in putting in a cable way that would give the least trouble for maintenance and in that work it was necessary to select the system of cable, one that was best adapted in each case to the work. The work consisted first in preliminary investigations as to the work to be done, the best way to do it, then the apparatus at the plant, the installation of the plant, the putting into successful operation and testing out, then keeping track of it afterward for a period of time.

Q. Has your connection with each of these systems of which you have spoken continued from the time—from the choosing of the system until the system was in operation? A. Yes, sir.

Q. And for any time later or did your connection cease?

A. Well, in the case of the Pennsylvania Railroad we were engineers for the railroad over the period of, oh, I guess eight or ten years and if anything happened, why, of course we were immediately called in on it.

Q. By we, whom do you mean?

A. The Westinghouse-Church Conveyor Company.

Q. Is that firm engaged in engineering activities?

A. Yes, sir.

Q. Can you state whether or not its operations are

(Testimony of J. M. Young.)

of small **[656—574]** magnitude or great magnitude?

A. Well, they are of rather large magnitude, I should say. The company is engaged in practically all large engineering works such as the building of power-houses, railway systems, railway terminals and dock improvements, rather a wide range, also power transmission systems, hydraulic plants.

Q. How long were you connected with this firm?

A. I was connected with that firm from, oh, well, in an indirect way from 1912 to 1908, then I was actually in the office on the work from 1904, to 1908.

Q. Now, calling your attention particularly to the coal-conveyor system of the Inter-Island Steam Navigation Company here in Honolulu, have you ever that conveyor system in operation?

A. This particular one?

Q. Yes? A. Yes, sir.

Q. In what operation was it in use?

A. In the operation of conveying coal.

Q. What means, if any, are provided at this plant for regulating the tension on the cable?

A. That is accomplished by means of a floating idle weight which comes in contact with the cable by means of a pulley and the weight floats up and down as the tension varies.

Q. I call your attention to a model, this model which has been offered in evidence by the plaintiff and ask you if this correctly in general shows the construction and mode of operation of the makai end of the coal-conveyor plant of the Inter-Island

(Testimony of J. M. Young.)

Steam Navigation Company, not in all details by generally speaking?

A. Yes, sir, in a general way I should say that that was correct.

Q. I call your attention to what has been referred to by the witnesses as a weight or the weight or the box and ask you if that in general correctly shows the position of the weight to **[657—575]** which you have just referred?

A. Yes, sir, that looks all right.

Q. What is the purpose of this weight, Mr. Young, or a purpose, if it has more than one purpose?

A. The purpose of that weight is to maintain a uniform tension in the cable.

Q. In connection with the gripping and ungripping of the cars, how does this weight operate while the cable is in motion?

Q. Well, when a car is gripped—when a cable is gripped by the appliance on the car for that purpose, that of course puts a slight jerk on the cable and that is transmitted to the weight and the weight would move it slightly, then immediately the car is in motion the weight will drop back to its normal position, say, or moves up and down to take up the variations.

Q. Is that raising of the weight on the gripping of the car considerable or slight?

A. No, it is not very considerable, it is usually just a small amount, a small amount.

Q. Is there any necessity for having a weight on this cable at any point, a floating weight such as you

(Testimony of J. M. Young.)
have described, and indicated on this model?

A. Yes, sir, there should be a weight there in order to preserve a unity in the tension of the cable. Of course it would be possible to have the cable adjusted perfectly, the weight could be removed and the cable spliced the proper length to operate it for a short time, but then with the temper and stretch of the cable and other factors which come in make it advisable to have this weight there to take up this tension.

Q. Has the weight any other purpose?

A. Yes, it makes it easier to remove the cable in case it is necessary to take it off and replace it, makes the system more flexible.

Q. What is the effect, if any, upon the cable upon raising the weight after the cable is brought to rest?

A. The immediate effect of raising the weight is to reduce the tension in the cable **[658—576]** and immediately slack will appear as the result of the raising of the weight.

Q. Where does that slack appear first?

A. It first appears in the parts of the cable which are nearest to the weight.

Q. With reference to the model, what do you mean by the part nearest, assuming that the weight is in approximately its correct position?

A. Well, it will first appear right up above here, the portion of the cable in the two strands that support the weight.

Q. Is the effect of the raising the weight evidenced in any other point on the cable system?

(Testimony of J. M. Young.)

A. Yes, gradually and slowly the slack will travel around the system and will become noticeable in practically all parts.

Q. By gradually and slowly, what do you mean in connection with, for instance, the point at the extreme makai end of the conveyor—that is, put it this way, how long a time if you say the slack becomes evidenced at other points on the system gradually, how long a time would it take for the slackness to be evidenced at a point at the makai end of the conveyor and upon the makai eight pulleys at the commencement of the turn?

A. Oh, there is a considerable interval of time, I should say perhaps between one and two minutes.

Q. In what direction from the weight does the slack travel or appear to travel?

The COURT.—That is, as regards the axis of the cable weight?

Mr. STANLEY.—Yes.

A. It will travel in both directions.

Q. Meaning by that as regards this system in both directions, how do you mean?

A. I mean that part of the slack goes that way and part of it goes this way.

Q. All on one track, Mr. Young?

A. First on one track and then it becomes apparent on the other track. **[659—577]**

Q. On both ends of the rope or only one end of the rope? A. Both ends.

Q. Now, calling your attention particularly to this point by the eight pulleys at the makai end of the

(Testimony of J. M. Young.)

conveyor, these eight pulleys being on the Ewa side of the track, assuming that the weight is in its correct position, state whether or not—state how the slack travels from this point to the point over there by the eight pulleys?

A. Well, on raising the cable—raising the weight the slack will pass through the cable in that direction and in this direction and the cable will become slack between the supporting dollies or pulleys.

Q. By the supporting dollies or pulleys, do you mean those in the straight line of track or around the curve?

A. Well, the dollies would apply to those on the straight line of track, the pulleys are called the wheels set on the curve on the end.

Q. This is called a pulley and this a dolly? (Indicating.) A. Yes.

Q. By a pulley you refer, for instance, to Defendant's Exhibit 5? A. Yes.

Q. And by a dolly you refer to Defendant's Exhibit 4? A. Yes.

Mr. STANLEY.—I ask that these, Defendant's Exhibits 4 and 5, be specially marked and received in evidence.

The COURT.—They may be received in evidence as exhibits and marked respectively as indicated by their marks for identification.

A JUROR.—Mr. Young, do you mean the slack would travel both ways from the box, if raised up, the slack of that rope there, the slack if you raised the buckets?

(Testimony of J. M. Young.)

A. Yes, sir, it does. As a matter of fact, if you make a mark on the cable at this point where the two are practically and then raise the box you would find the mark would move this way and would move that way with the cable and it moves approximately the same in each [660—578] direction. For example, if by raising the weight of the cable you get a foot of slack at that point, six inches of it would go this way and six inches that way approximately, say within an inch.

Q. Mr. Young, are you familiar with this conveyor down here? A. Yes, sir.

Mr. SUTTON.—You stated a few moments ago by raising the weight the slack became evident throughout the length of the system and that it gradually approached this point up here, referring to the point where the eight pulleys are at the makai end of the conveyor, and qualified your answer that it took a considerable time by saying that that was somewhere between one and two minutes. Now, at the end of one or two minutes, how much slack would be evident at a point immediately mauka of the eight pulleys on the Ewa side of the track at the makai end of the coal-conveyor, that is—

A. The slack would manifest itself by dropping down between the supporting dollies and at that time the cable would be slack enough so that it would touch the plank floor between the dollies not the entire distance but for a considerable portion of the distance, perhaps a few feet or something like that.

Q. Would that slack or any amount of the slack

(Testimony of J. M. Young.)
be evident on the track or immediately opposite?

A. Yes, sir, it would be shown on both sides.

Q. That is in the Waikiki track?

A. Yes, sir, about the same I should say.

Q. Have you observed, Mr. Young, the effect upon the cable of suddenly stopping the engine which gives power and operates the cable? A. Yes, sir.

Mr. DOUTHITT.—When, what time?

Mr. SUTTON.—Within the last month, Mr. Young?

Mr. DOUTHITT.—We object to it, there is absolutely different [661—579] motive power used.

Mr. SUTTON.—Mr. Young, did you observe that effect last year when the steam engine was the motive power?

A. Well, that is a point that I have had a great deal to do with. I have put in and operated this system both with steam as motive power and electricity as motive power, and that is one of the important factors that we have to look out for is the matter of gripping and ungripping cars and what happens to the cable. Of course, it will be admitted, that there is some difference between the action of steam and electricity, there is quite a difference.

Q. In what way, what is that difference, for instance?

A. Well, the electricity is much more satisfactory for such purposes.

The COURT.—Well, only in that particular is there a difference; you say there is quite a difference, what is that difference, not as to whether it is satis-

(Testimony of J. M. Young.)

factory or unsatisfactory, but whether or not the force or tension is indicated more by one system than another?

A. Well, the electric power is subject—is less subject to fluctuation because the governing of the machine is better.

Mr. SUTTON.—Well, calling your attention particularly to the portion of the stopping of the motive power, is there any difference between where your motive power is steam and stopping where your motive power is electricity?

A. No, there is no material difference.

Q. Are you familiar with conditions in this plant as they were say a year and a month ago?

A. A year ago?

Q. Yes. A. Yes, sir.

Q. At that time what was the motive power on this plant? A. That was steam.

Q. Steam? A. Yes, sir. [662—580]

Q. Do you recall what the means, if any, was for shutting off the steam, shutting off the power?

A. Well, I did not notice that point particularly, but I believe though it was an ordinary globe valve, it may have been a gate valve, but anyway it was a valve operated with a handle or crank.

Q. What is the difference between a globe valve and gate valve? I understand the difference is that in one the steam is shut off instantly and in the other, that is the globe valve, several turns have to be made in order to gradually turn off the steam?

A. Well, you are mistaken in that. A globe valve

and gate valve require about the same number of turns to handle and shut off, The principal difference is that a globe valve in its operation changes the direction of the steam, whereas the gate valve interposes a gate in the opening and it is a straight shut off, whereas the globe valve involves a change of direction of steam.

Q. Regardless of whether the method of shutting off the steam was a gloge valve or a gate valve, could the steam be shut off instantly? A. No.

Q. In the case of electricity can the power be shut off instantly?

A. The switch can be opened practically instantly.

Q. And in the case of either steam or electricity is there any motion on the part of the car grip and the cable or in the cable itself after the motive power is shut off?

A. Yes, there is a movement, the cable-way does not come to rest immediately, there is a short interval of time.

Q. What is that due to?

A. Why, it is due to the inertia of the moving parts, that is the weight of it and motion, the pulleys, cable, cars and machinery.

Q. How far would you say that a car, for instance, would travel from the time that the steam is shut off until the car [663—581] comes to rest?

A. Oh, it would travel about a car's length approximately.

Q. Have you any idea of the length of the cars in use down at the coal-conveyor plant of the Inter-

(Testimony of J. M. Young.)

Island Steam Navigation Company?

A. Well, I have not measured those cars, I should say, off-hand though, they are approximately ten feet over all.

Q. From bumper to bumper?

A. Yes, approximately that, in the neighborhood of ten feet.

Q. Now, as I recall the testimony of one of the witnesses in this case, Mr. Young, it is this, that on one occasion the motive power was shut off, the motive power which operated the cable was shut off, and the momentum of the cars was sufficient to give a slack at this point after an interval of time sufficient for a man to walk from the scale-house to the makai end of the track a distance, say, of two hundred and seventy feet?

Mr. DOUTHITT.—Between two hundred and fifty and three hundred feet.

Mr. SUTTON.—Between two hundred and fifty and three hundred feet, Mr. Douthitt says. Now, in your opinion would it be possible for any slack to be found at that point after that interval of time?

Mr. DOUTHITT.—That depends on how fast you walk?

Mr. SUTTON.—Well, consider you run.

A. May I ask a question?

Q. Yes.

A. What was the condition of the weight at that time?

Q. The weight had not been lifted.

Mr. SUTTON.—We propose to show by this wit-

(Testimony of J. M. Young.)

ness that in any case the slack that would be caused by the momentum of the cars almost instantly disappears on account of the fact that this weight tumbling with a few seconds takes up that slack.

Mr. DOUTHITT.—We object to it. [664—582]

Objection overruled.

Exception.

Mr. SUTTON.—Can you answer the question now, do you recall the question so that you can answer it?

A. Yes, sir, I would like to hear that again, if you please?

Q. One of the witnesses in this case testified that on one occasion when he was at the scale-house the engine that operated the cable was stopped; that immediately thereafter he started for the point where the eight pulleys are at the makai end of the conveyor on the Ewa side and when he arrived at that point there was sufficient slack so that there was no necessity for lifting the weight, that there was sufficient slack without lifting the weight to replace the cable on the pulleys. Now, what I want to find out from you is this: The cable being off at that time the four mauka pulleys of the series of eight, I would like to find out from you, Mr. Young, as to whether in your opinion there would be any slack at that point due to the momentum of the cars by the time that that man had walked from the scale-house to this point a distance of between two hundred and fifty and three hundred feet?

A. Why, the slack would have been taken up

(Testimony of J. M. Young.)

before that time by the moving weight. The slack will move around, of course, and that is why the weight is placed in the line is to take it up and it certainly would not have remained there that long. It is possible for the slack to remain for a short period just instantaneously you might say.

Q. How long a period, for instance, in seconds or minutes or hours?

A. Oh, a couple of seconds it might remain there but certainly not very long, because the cable moves around, there is a weight attached to it here, it must come.

A JUROR.—Mr. Young, the engine has stopped, the car is running this way, it would naturally go a little lower down on that end, the car is running that way after the engine is stopped. [665—583] Now, then, the weight taking in the slack ahead of the cars, is that what you mean, the slack that the cars shove?

A. Yes, sir, the weight will take up the slack in any part of the system but it will take it up nearest of course in front of the car because not affected by the momentum.

Mr. SUTTON.—Now, Mr. Young, assuming that there was not only a car on this track but also a car on this track and both cars were gripped to the cable and both moving, would there be slack between those cars, would there be more slack on one side of the cable than the other?

A. No, there should not be because the weight is so put on, so adjusted, as to automatically take up

(Testimony of J. M. Young.)
the slack and prevent its appearance, certainly in any abnormal amount.

A JUROR.—Mr. Young, that weight would have to be heavy enough to haul the weight of the cable and weight of the cars, wouldn't it?

A. Certainly, yes, which it is.

Q. About how much would that box with the weight in it weigh?

A. Oh, that box will weigh approximately nine hundred or a thousand pounds, I should say, about that.

Q. Well, the slack that is ahead of the cars after they stop comes clear around the conveyor and passes over the track before it gets to the box?

A. Well, you understand that that travels in both directions.

Q. Yes, but I say the slack which is ahead of the cars, assuming that they are loaded cars on this makai or Ewa side of the conveyor?

A. Yes, with the engine standing some of it will.

Q. Well, it passes over the drum before it gets to the weight, does it not? A. Yes, sir, yes.

Q. Well, will the weight of that box take it up over the drum, too? A. Yes, I believe so.

Q. It will slack around the drum?

A. This drum you understand is geared up by a couple of pinions and gear wheels [666—584] and with the power cut off it can be moved, it is not very heavy to move with the power shut off.

Mr. SUTTON.—Is the weight of the box to which reference is made sufficient to turn the drum and

(Testimony of J. M. Young.)

the cable around upon the drum in bringing the cable to rest with equal tension at all points?

A. Yes, yes, I believe so, it will just about do that, that is the idea.

A JUROR.—Mr. Young, you spoke about it being geared up to the drum to get its power, it is geared to get the power by turning the gear, by turning the drum?

A. The object of putting the gear-wheels in is to reduce the rate of the motion. An electric motor is a comparatively high speed proposition and the drum is comparatively slow speed.

Q. But with a steam-engine?

A. Well, the same is true there, the one travels considerably faster than the other and it is necessary to gear it down or gear it up as the case may be.

Mr. SUTTON.—Do you recall, Mr. Young, right at this point, what the conditions were with regard to the gearing up or down, say a year ago, when steam was in use?

A. Well, the steam, the shaft of the engine runs at a higher speed than the drum so that it is necessary to gear the speed down.

Q. And was it geared down? A. Yes, sir.

A JUROR.—But in that gearing if the drum runs on the same speed as the engine, run direct to the engine it would not have the power it would if it was geared?

A. Oh, no, the gearing has a double function, it reduces the speed but increases the power.

Mr. SUTTON.—Do you all understand that? If

you do not have Mr. Young explain it. Why is that, Mr. Young?

A. Well, it is because in connection with the fundamental laws of motion the power—there are two factors involved for any given work that is done, the one is the force that is employed [667—585] the other is the way with which that force is employed. Now, if we employ comparatively great force the speed with which it accomplishes its work need not be so rapid as if we had a small force working at a high speed. That is a small force with a high speed will accomplish the same work as a high force with a small speed. They are the two factors, force and speed, and that is a fundamental law that applies to all forms of gearing and belting.

Mr. SUTTON.—Have you had any experience with cables, the use of steel cables? A. Yes, sir.

Q. Briefly describe the use of the cables to which you refer, how long they were used and what manner, how long the weight or strain put upon it?

A. Well, my experience with a cable has been rather a wide one and covers practically all the range of the use of cables and I have had experience on the Ledger Cable-ways, the Roebling Cable-ways, the Trenton Iron Company's work and the Hunt system, the Robinson system, the Jeffries system and each one of those is quite a little story in itself. I can detail it to you if you wish it.

Q. I don't say that, but if you had any experience with the use of rotten cables?

A. Yes, rotten cables are nearly always present,

(Testimony of J. M. Young.)

rotten cables occur in nearly all kinds of cable work practically all the time, because the strands of the wire will break in passing over the pulleys, sometimes due to wear, other times due to undue bending of the fibres in passing over the pulleys so that a broken cable is a very common occurrence. In fact, on most any cable-way it is an easy matter to find broken strands of the cable.

Q. In these cables to which you have reference one or two cables, have pieces of wire been sticking out from the cable itself, pieces of fine wires composing the strands?

A. Yes, [668—586] sir, that is very common.

Q. Could you illustrate by reference to this piece of cable here?

A. Now, just what is it that you want illustrated?

Q. Just illustrate by the use of this cable how the wires come out and how they appear?

A. Well, there are two kinds of fractures that are common, one is a fracture that occurs on the inside of the strand due to the friction of one strand over the other and undue bending of the wire; in such a case the wire would pull out and stick out there a short distance anywhere from one-tenth of an inch in a cable like this up to perhaps three quarters of an inch. The other kind of fracture is one that is due to wear on the surface of the cable and the ends of the wire in such case are worn down and assume a sharp edge due to being worn down; in such case one strand would stick out that way and one back this way so there will be two ends. In the other

case there will be just one end.

Q. Mr. Young, will you just make a little drawing illustrating the effect of wear—before I ask you that, Mr. Young, I would like to know in speaking of cables and the wear on them whether you meant to say that the strands were sticking out or the wires were sticking out?

A. I was talking about the individual wires composing a strand. Just what is the point?

Q. I just want you to illustrate the effect of wear upon the strands of a cable such as this?

A. Do you mean the individual strand?

Q. Or the wires composing the individual strand?

A. I will simply make a sketch then of one wire and the shape—

Q. If you can make a little sketch showing the cable longitudinally in section, a side view of the cable and show where the wire comes, then illustrate the effect upon an individual [669—587] wire of one of the strands of that cable?

A. Well, the wire of course, comes on the outside of the cable and comes on that portion that comes in contact with the pulleys and the steel being harder than the cast-iron of course it naturally grooves the iron out in much the same shape as this is shown, but the steel also suffers in the process of abrasion and becomes flattened on the outside, and after it is worn, the cross-section of the wire, that is an individual wire would be like that (illustrating with drawing), this portion would be worn off so that a cross-section of the wire would be something like

(Testimony of J. M. Young.)

that at the center. Now, if we take a side view of an individual wire which would be bent around like that—we would find it worn down in the center like that, this being a cross-section of the wire itself.

Q. A cross-section of the wire itself?

A. No, a side elevation of the wire, it would be worn down somewhat in this shape, or a more exaggerated shape like that.

Q. And can you indicate by putting the letter A at the point where the wire would break from being worn out?

A. This point A that would be the point of minimum cross-section the point at which the break would occur due to wear on the outside.

The COURT.—That is the weakest point as a matter of fact? A. Yes, that is the weakest point.

The COURT.—One is a cross-section and the other a longitudinal section of the same wire? A. Yes.

Mr. SUTTON.—Now, in case, Mr. Young, the wire was worn—the cable was worn and the individual wires were in the condition that you have illustrated them to be on this piece of paper—

A JUROR.—Could you have Mr. Young explain this to me, in explaining it go back a little further and refer to the sample of cable?

A. The primary cause of wear on the cable [670—588] is the abrasion caused on the surface of the cable from the cast-iron. The cable is made of steel which is hard and elastic and it cuts into the cast-iron but in that process of cutting it is subject to abrasive action and gradually wears down. The

(Testimony of J. M. Young.)

wear is most apparent on the exterior of the cable on the portion that come in contact with the cast-iron pulleys. The effect of that wear is to flatten off the rounded shape of the individual wires tending to make them flat. That flatness of the individual wires ultimately shows in the cable by making a smooth surface of the cable so that it is more like a bar of iron from casual observation, the effect of the wear is as shown on this sketch; it tends to wear the wire down on one side such as to reduce the cross-section leaving the exterior surface of the wire flat and the other side in its original form such that a cross-section there would be a semi-circle or at least a segment of a circle and the side elevation would show the wire gradually tapering off to a point near the center where it would be the minimum. Then it would gradually enlarge and come back to the full-cross-section of the wire. One of those views is a side elevation of the wire, the other is a cross-section.

A JUROR.—Well, now, in this here, your illustration here, say a wire of three thousand feet on an endless pulley going around like that and it gradually wears down and flattens out in this condition would that tend to lengthen the wire, lengthen the whole cable?

A. Well, it would in an extreme case. By an extreme case I mean this, that when a cable is first put into use it is, we will say, its strength—we will say a cable like this cable will have a strength of perhaps say forty thousand pounds, something like that, and as the wires, the cross-section becomes somewhat less

(Testimony of J. M. Young.)

the cable will stretch a little bit. That stretch, however, does not last very long; it soon assumes a condition where it remains constant, very little change [671—589] takes place, because the strength of the cable is so great relative to the stress to which it is subjected. A factor of safety is employed there that is approximately the same as in a passenger elevator, say a factor of safety of about twenty or upwards. So that you can easily see that in a cable working under those circumstances or under those conditions would not be subjected to any very large stretch, because the force on the cable is so small relative to its ultimate strength.

A JUROR.—Yes, but I mean if it is worn down as you have described, as it wears down going around the curve it flattens and it gradually flattens on one side that leaves the other side so that the whole weight is going on the strong side of the cable?

A. No, no, the reduction of the cross-section of the individual wires there would not, perhaps, be more than about, well, it might be about one-third.

Mr. SUTTON.—A third of what?

A. A third of the cross-section of the wire.

Q. Of that individual wire?

A. Of that individual wire, and that will not materially affect the strength of it. Cables are discarded not on account of the strength being impaired, not on account of undue stress, but on account of other incidental matters, for example, such as unnecessary wear on the pulleys. You notice the grooving on those pulleys, that grooving and cutting out the cast-

(Testimony of J. M. Young.)
iron is very much accentuated by a worn cable, the particles protruding from the cable that is broken wires protruding, and it has this effect here, the worn surface of the dolly. That is very much accentuated by sharp ends protruding even for a short distance. Then another effect which is even more troublesome than that is the cutting out of the grips which are fastened to the cars and which propel the cars. The grips are cut out quite rapidly by a broken cable by a cable the strands of which are broken. It is not the strength [672—590] of the cable which usually rejects the cable, it is the worn surface which damages the pulleys and also cuts out the grips.

A JUROR.—Would a broken worn cable, such as you have described, would it have any effect; would it hinder it running around the pulley?

A. No, it will not.

Q. It would not make it any harder to run around?

A. No, the cable has some little flexibility, is somewhat more flexible in the worn condition than it is when new? A new cable is much more troublesome about cutting of the pulleys than an old one because it is stiffer, more rigid and it is subject to idiosyncrasies of that kind and it will twist over much more readily than a cable which has been in use.

Mr. SUTTON.—In this connection would the worn effect of the cable, that is, having the wires sticking out perpendicular, say from the cable itself, a distance of one sixteenth of an inch or greater have any effect upon the cable in its operation on the curves around the pulleys? A. No, no, it will not.

(Testimony of J. M. Young.)

A. No, no, it will not. You see that effect is so incidental it is such a small thing it is very much like the fibres of a hemp rope sticking out there, speaking relatively, and they smooth down and straighten out going around the pulleys.

Q. What happens to these projections from the cable when the cable is passing around the pulleys?

A. They smooth out.

Q. And by smooth out, what do you mean?

A. Well, I mean that they are crushed down parallel with the axis of the cable in the direction parallel with the axis of the cable.

Q. What effect, if any, had the grips or the shoes rather of the grips of the cars on the cable in that condition?

A. They have very much the same effect with this exception that the individual strands broken in are more likely to be bent back with the grips than they are going around the pulleys because [673—591] the grip operates from two sides at once whereas the pulley—the wire going around the pulley, the cable going around the pulley, touches one side only and has the tendency to smooth out the wires and bring them down. Of course there would be a slight rotary motion perhaps, that would be present, that would not be a necessary thing, however.

Q. By a rotary motion, explain which you mean?

A. Well, a slight tendency to move around its own axis.

The COURT.—It kind of rocks, the cable rocks?

A. Yes, back and forth, a small amount, however,

(Testimony of J. M. Young.)

that would not be affected materially by the presence of those wires.

Mr. SUTTON.—What would be the cause of the rotation, generally speaking?

A. Why, that would be due to small variations in the tension of the cable. You understand that that cable is made up by twisting a large number of wires. They are brought in that condition so that that is essentially a twisting operation and if the cable is tightened, if the ends were free to rotate, it would untwist partly so that any change of tension or stress in that cable will have an effect to rotate it one way or the other, but that does not affect the integrity of the cable at all; it simply has the tendency of the particles to release themselves to be free at the end.

Q. Now, what would be the tendency of a roughened cable in passing around the pulleys at one of the curves on this conveyor, one with wires sticking out from the cable itself a distance anywhere from one-sixteenth to an inch—one-sixteenth of an inch to an inch?

A. Why, I don't think you could observe any effect at all; I think it would simply run around the pulleys the same as any other cable.

Q. Calling your attention particularly to Defendant's Exhibit 5, which as I understand is one of the pulleys similar to the pulleys in use on the curves, will you state what the [674—592] effect, if any, would be in the cable in its roughened condition in regard to that pulley, would there be a tendency to fall, a tendency to rise, a tendency to keep away

(Testimony of J. M. Young.)

from the pulley, or what would be the effect of that roughened condition of the cable in its operation on that pulley?

A. Well, the effect of the contact of the pulley is to smooth out the broken wires, and the force required in doing that is microscopic compared with the stress in the cable. It is very small and to an observer standing by the pulley while it is in operation you could not detect any difference between the operation of a cable with *with* those broken wires and with one that had no broken wires, the operation is practically the same. Of course, there might be some very small incidental effects there that would be purely local that might occur on a half an inch say, on a portion of an inch on the circumference of this pulley, but they would not extend for any distance because the wires touch of course, only at one little spot; that is, a broken end, it could not extend for any distance.

Q. It has been testified in this case, Mr. Young, that the cable on account of its roughened condition has a tendency to rise up on the pulleys at the curves, will you state whether in your opinion that is true or not? A. In my opinion?

Question withdrawn.

Q. In your opinion, Mr. Young, would the roughened cable have a tendency to rise on the pulleys?

A. No. I think—in my opinion the effect would not be of that kind at all. It has purely an abrasive effect upon the surface of the pulley.

Q. In order for the cable to rise out of the groove

(Testimony of J. M. Young.)
in the pulley, the kind of pulley in use upon the curve, similar to Defendant's Exhibit 5, what motion is gone through by the cable. I don't know whether I make myself clear. I wish you would explain, Mr. Young, what occurs when the cable rises out of the pulley such [675—593] as this and goes above the top of it. Perhaps you can illustrate better by the use of a piece of paper?

A. Well, you understand, first of all that these pulleys are specially designed with a view to keeping the cable in a correct position, and the pulleys are so made with respect to the axis on which they revolve that it is capable of lifting up and down.

Q. The pulley itself?

A. The pulley itself can lift up on its axis; so that in case of a cable—the cable when it is passing around the pulley with the grip attached tends to lift up on account of the presence of the grip why the pulley will follow it, the pulley will follow it up and in that way it is always in contact with the surface of the pulley. Now, then, in case *of* an obstruction of any kind were thrown on the track such as a piece of wood or a lump of coal or anything of that kind should get under the cable and would tend to lift it up, of course in its contact with the surface of this pulley which has a conical shape, it would tend to lift the pulley up and it is self-protective. It is more or less a fool-proof device; that is why it is put in there by Mr. Hunt. He made it especially to be fool-proof so that in case of an obstruction on the track the pulley, the cable would automatically remain on the pulley.

(Testimony of J. M. Young.)

Q. Because it follows the cable up and down?

A. It follows the cable.

Q. Illustrate if you can the effect of the cable rising on the pulley above the groove and say coming within a quarter of an inch of the top of the pulley. I wish you would illustrate, Mr. Young, if you can, the effect from the standpoint of the cable in rising on the pulleys?

A. Oh, yes, I see what you are driving at. You understand that that cable is around a circle; it is about three-quarters, perhaps eighty per cent, of a circle and on account of the pulley being made in a conical shape on the side of the circumference of that curve, which is about a twelve-foot radius, is less at the bottom part of the pulley than it is above **[676—594]** so that in order to get the cable off of that series of pulleys it is necessary to increase the length of the cable to a certain amount due to the larger diameter of the pulleys at the top than at the bottom, and on account of that fact any tendency of the cable to rise is accompanied by the lifting of the pulleys such as to counteract the effect. I can make a sketch so as to show the shape of the pulley and perhaps illustrate that better. **[677—595]**

Direct examination of J. M. YOUNG resumed.

Mr. SUTTON.—Mr. Young, would you kindly explain the action of the cable in relation to a car gripped to the cable by a shoe in its course around the pulleys, say at the makai end of the conveyor?

A. Well, a car on its passage around the group of pulleys would tend to raise the cable a little bit in

front because of the way that the grip is hung. The grip is hung in such a way that the front end is slightly higher than the back end and in going around the cable is raised slightly such that the pulleys are lifted up slightly in going around. And the back end of the grip being lower drops the cable down in its old original running position. [682—600]

Q. As I understand it the grip which holds the cable is open on one side, the slot into which the cable drops has a means for permitting the cable to be taken out of the shoe? A. Yes.

Q. On which side of the shoe is that opening?

A. It is open on the outer side, that is, the side most remote from the center of the circle.

Q. Referring then to the middle, the opening on the slot from which the cable could be removed would be on the outer side? A. Yes.

Q. Can you give us your opinion as to what causes, if any, result in the cable coming off the trolleys on the curve?

A. The causes for the cable coming off?

Q. Yes.

A. The cable might be thrown off the pulleys by an obstruction on the track; it might be thrown off by a broken pulley, such, for example, as a piece being knocked out of the edge of one of these pulleys; it might be thrown off by one of these strands consisting of nineteen or twenty wires, perhaps, maybe more, being entirely broken off and being ravelled back for a foot or two or a few feet, that might get caught upon some obstruction and thereby throw the cable off.

(Testimony of J. M. Young.)

Q. Do you know of any other causes which would result in the cable coming off?

A. Yes, it might be thrown off.

Q. That is in the course of its operation?

A. It might be thrown off by the derailment of a car.

Q. It might be thrown off by the derailment of a car? A. The derailment of a car might do it.

Q. Without one of the causes operating and without human interference, is there any way in which the cable could get out of its position in the slot or groove in the pulleys on the curve?

A. No, the stress on the cable is in such a direction that would naturally keep it in position, and any force that is operating [683—601] there is in that direction. Therefore the cable would tend to keep in position.

Q. What would be the effect, if any, upon the cable of lumps of coal on the track sufficiently high to interfere with one of the wheels on the car??

Objected to as immaterial and there being no evidence to show that there were any lumps of coal on the track and as merely speculative.

Objection sustained.

Mr. STANLEY.—As I understand the testimony in this case the cable in use at the time of the accident to Mr. Ward was a six strand, nineteen wire, right hand, three-quarter inch cable, steel cable, similar to this cable here with the exception that this is a left-hand cable. Is that right, Mr. Douthitt?

Mr. DOUTHITT.—That is right.

(Testimony of J. M. Young.)

Mr. STANLEY.—A Roebling cable?

Mr. DOUTHITT.—A Roebling cable.

Mr. STANLEY.—I will ask you, Mr. Young, whether or not a cable of that construction was a proper cable to use upon this coal-conveyor; that is, of that type?

Mr. DOUTHITT.—It is admitted that the Roebling cable is a proper type, so far as the type is concerned, and it is therefore immaterial.

Objection sustained.

Mr. SUTTON.—Now, Mr. Young, what is the breaking strain of such a cable, or, in other words, how much weight will it sustain before breaking, an absolutely new cable?

A. Oh, that cable will hold probably in the neighborhood of forty thousand pounds dead pull.

Q. What is the actual amount of approximate amount of strain placed upon the cable in its position upon such a conveyor as this, or upon this conveyor?

A. Oh, about, I [684—602] should say, from a thousand to twelve hundred or fourteen hundred pounds; in that neighborhood.

The COURT.—Meaning by weight, tension?

Mr. SUTTON.—Yes.

Q. Is that tension greater than fifteen hundred pounds the instant the car is gripped to the cable, a loaded car, the car and its load weighing about three tons, is the strain on the cable when such a car grips to the moving cable greater than fifteen hundred pounds?

(Testimony of J. M. Young.)

A. No, I think not. I think fifteen hundred pounds would be probably a maximum.

A JUROR.—Is that strain generally throughout the entire cable, or is it more at either end of the conveyor?

A. Well, it is uniform between the car where the cable is being gripped and the engine which is pulling the cable.

Mr. STANLEY.—Uniform?

A. It is uniform in that portion just the same as if we had a rope stretched across this room on which we were pulling if we were to cut that rope at any place and put in a spring balance the reading of the spring balance would be the same as long as we pulled.

Q. But would not the tension be greater as it winds or travels around the pulleys?

A. No, it is practically uniform; there is very little difference. Of course, there is a variation there which is due to the friction of these pulleys, but that is comparatively small expressed in percentage. The friction of those pulleys would probably amount to, oh, say, a maximum of five or eight per cent, something like that.

Q. The friction would be greater on a new cable than an old one, the one you described a little while ago? A. Which friction do you refer to?

Q. Around the pulleys?

A. The friction on the surface of the pulleys from this point is somewhat greater on an old cable due to the fact that the cable is roughened, pieces of

the [685—603] cable breaking and sticking out so that the bight that the cable gets on the pulley is somewhat greater, therefore, the friction is so much greater.

Q. Greater on the dollies also?

A. Yes, it is greater on every portion of it, particularly on these pulleys.

Mr. SUTTON.—Would there be any greater friction on the axis on which the pulley revolves with an old cable or new cable?

A. No, there would be no difference, because the axis of the pulley receives no difference in impelling cause they are turned just as easily as if pulled by hand.

Q. A new cable or old cable? A. Yes, sir.

The COURT.—The strain on the cable is greater at the moment of starting the car than at any other portion in order to overcome the inertia?

A. Yes, sir.

Q. So that when the clutch and shoe come in contact with the cable at the moment of starting the strain on the cable is greater?

A. Yes, and I should say the maximum would be probably fifteen hundred pounds.

A JUROR.—Would that be for five or six or eight loaded cars, and pulling empties on the other side?

A. Yes, sir; that would not be the result not with pulling one car that would be the normal operating condition, I should say.

Q. For the whole conveyor?

A. Yes, sir, of the entire system. In other words,

(Testimony of J. M. Young.)

the strain in that cable under normal working conditions with loaded cars and empty cars, the cars being gripped and ungripped, would be about, we will say, the strain would be about one-twentieth or one twenty-fifth of the strength of the cable.

Q. From one-twentieth to one twenty-fifth?

A. It varies. Assuming that the cable had a strength of forty thousand pounds and there was a strain in the cable of fifteen hundred pounds, that would make a ratio of one to twenty-seven and a half; assuming [686—604] that the cable had been in use a few weeks and worn down slightly and the strength was not so great then the ratio would be somewhat less. A cable of which one-third of the strength were taken away that would then be a ratio of twenty, so that there is a constantly varying ratio. It does not remain constant due to the wear of the cable.

Q. How long, in your opinion, would it be good practice to use a cable such as the one I have referred to, a Roebling, three-quarter inch, six strand, nineteen wire cable on this conveyor, assuming that the use of the conveyor for discharging boats is about six or seven or eight days a month in discharging the coal vessels, and two or three hours a day throughout the year in loading coal onto the Inter-Island vessels and in similar work. Under those circumstances, what would you say, in your opinion, would be good practice, what length of time would it be good practice to use a cable?

A. The economical length of life of a cable working

under those circumstances would be about eighteen months, I should say.

Q. And by the economical life of the cable, what do you mean, simply the cable itself, or in relation to other things?

A. Well, I mean the point at which the repairs and maintenance cost to keep a cable in good working condition would exceed the interest on the cost of the new cable.

Q. And in connection with the economical life of the cable, would any consideration be given by you to the fact of the wearing of the cable on the pulleys?

A. Certainly there would be wearing on the pulleys, the detrimental effect of the broken wires in passing over the grips, the wearing of the pulleys, the grinding out of the floor on the cable-way.

Q. Any effect on the drum?

A. Yes, sir; the wearing of the drum also.

Q. At the end of eighteen months such as I have described, [687—605] what would be the proportion of the strength left in that cable as compared to its original strength?

A. Well, I can't really give my opinion on that; it is a question I have never investigated by actual tests, but my opinion would be that a cable would be about five-eighths of its original strength.

Q. At the end of eighteen months of such use?

A. Approximately, that would be a guess only.

The COURT.—You have never tested a cable that has been used for eighteen months under similar conditions?

(Testimony of J. M. Young.)

A. I have never tested one under those circumstances.

Q. Never made an actual test? A. No.

Mr. SUTTON.—Have you ever used a cable or seen a cable in use for other work after it had been discarded for use of this nature?

A. Oh, yes; that is quite common. Cables are removed, that hauling rope would be used for guy wire or for other purposes, purposes which involved the strength of the cable, but which would not involve the wearing of the surface.

Q. Mr. Young, the testimony in this case of Mr. Ward is that at the time of this accident to him the cable was in this position indicating on the model that the cable was at the point at the makai end of the conveyor and on the series of eight pulleys on the Ewa side of the conveyor; that the cable was out of its position on the first four of the eight pulleys that is on the mauka four of the eight pulleys in its position on the makai four of those eight pulleys. Will you step right down here to the model so that you can see better? In your opinion, Mr. Young, could the cable get in that position without human effort?

A. No, I believe not. I do not believe that cable would get in that position itself. Because of the relatively short angle that it would have to make, considering the stiffness in the cable, the amount of bend necessary and the short distance between, I believe that is an impossible position considering the movement of the cable in normal conditions. [688—606]

(Testimony of J. M. Young.)

Q. That is an impossible position for the cable to assume if it has any care while operating?

A. Yes, while operating under its own force.

Q. Have you seen it in that position on the coal-conveyor of the Inter-Island Company?

A. I have seen it in that position.

Q. How recently?

A. That was about four days ago.

Q. How was it placed in that position; describe the method?

A. It was placed there by means of three crowbars, I believe it was, two—yes, three crowbars.

Q. Any one holding the crowbars?

A. Yes, sir; men were holding them.

Q. Four or five men? A. Yes, sir.

Q. Was it done in an instant, or did it require any length of time?

A. No, it was not done quickly. I suppose it took about six or eight minutes and was accomplished with some little difficulty, the cable did not readily assume that position.

Mr. DOUTHITT.—When was this?

Mr. SUTTON.—Four or five days ago.

Mr. DOUTHITT.—That is objected to as incompetent, irrelevant and immaterial, and I move to strike it out.

Mr. SUTTON.—Before your Honor rules, I desire to ask a question or two.

Q. Have you observed the cable in operation at the present time on the Inter-Island Company's coal-conveyor? A. Yes, sir.

(Testimony of J. M. Young.)

Q. In so far as its bending qualities and other causes necessary to put it in this position are concerned, is there any essential difference between that cable and the Roebling six-strand, three-quarter inch, nineteen-wire cable in use at the time of the accident?

A. No, there is no essential difference.

Motion denied. [689—607]

The COURT.—At the time this experiment was made, Mr. Young, was or was not the cable in operation? Was it stationary?

A. The cable was not in motion; it was stationary, but the weight had not been lifted, that is, the tension was on the cable.

Mr. SUTTON.—Mr. Young, it has been testified in this case that at the time immediately prior to the accident—by immediately I mean the very instant before the accident—Mr. Ward was standing in this position, one foot on the platform between the rails at the makai end of the conveyor, and his other foot resting on the end of one of the ties on the makai track pressing against the end of it in somewhat this position (illustrating).

Mr. SUTTON.—Leave out of the question the name of Mr. Ward, and say that a person.

It is also testified that *that* holding a crowbar in this position, I don't think that you can see from there?

A. Yes, I can see, I have got the angle.

Mr. SUTTON.—If I am wrong in this, Mr. Douthitt may correct me.

And that the individual was pulling on the crow-

(Testimony of J. M. Young.)
bar, the upper end of the crowbar. Let it appear that the base of the crowbar was at the base of the fifth pulley, in between, right by the corner where the lag-screw holds the face of the pulley or bed-plate of the pulley, the crowbar being inclined at an angle, the tip of the crowbar being declined in the direction Waikiki and the strain exerted on the crowbar being a pulling strain.

Mr. DOUTHITT.—He was holding it in position, not a pulling strain, a holding position, while the others were pulling as I understand.

Mr. SUTTON.—Holding it in a holding position with the two hands at the top of the crowbar. Now, will you state, Mr. Young, what, in your opinion, would be the effect upon that person in [690—608] case the crowbar slipped at the point where it was held, or that the cable itself slipped?

Mr. DOUTHITT.—We do not think this is a proper subject for expert testimony.

Objection overruled. Exception.

Mr. SUTTON.—What would be the effect upon the man in case of the slip of either the cable or crowbar in that position?

A. Well, the effect obviously there would be to throw the man back toward the center of the cableway; it could not be otherwise, because it is one of the fundamental laws of motion that the resulting motion is in the direction in which the force acts. Now, he is impelling himself in this direction, exerting himself, therefore, if the bar should slip at the bottom there on the pulley or on the cable the result-

(Testimony of J. M. Young.)

ing force would operate and he would be thrown toward the center line of the cable-way.

Mr. SUTTON.—Indicating by the center of the cable-way what, this platform?

A. Midway between two tracks, throw him in that direction.

Q. It has been testified, Mr. Young, in this case, by other witnesses, that a man who was standing in this position facing makai, his feet astride of the track, his right foot on the Ewa side of the track, his left foot on the Waikiki side of the track, the point where he was standing along between—about between the fourth and fifth pulleys of the series of eight to which we have referred and that he had the crowbar in this position (indicating)? A. Yes.

Q. The top of the crowbar was toward Ewa, the face of the crowbar was between the fourth and fifth pulleys, and the force exerted was towards Waikiki, that is the force exerted on the top of the crowbar was the pulling towards Waikiki; now, what effect, if any, would there be in case the cable slipped off the four pulleys on the makai end of the eight?

A. Is the [691—609] weight raised or lowered?

Q. The weight is not raised, it is in its normal position?

A. Well, the effect of a slippage there would be to give the cable a chance to straighten out between the tangent of that group of pulleys and some point down here such that its position would be moved over.

Q. By moved over, in what direction would you say, makai, Ewa, mauka or Waikiki?

(Testimony of J. M. Young.)

A. It would go Ewa and would go with quite a snap, I should say, with this weight attached to it.

Q. And assuming that he was standing in that position with the crowbar, as I have described, and the cable slips, what, of anything, will the cable do in relation to the crowbar?

A. Well, it would—depending on whether the crowbar slipped. If it slipped at the bottom, why the bar would go over this way; however, if it slipped up the bar then the bar would go over this way and the cable would probably strike the man.

Q. Where?

A. Strike his leg, I should say, if he straddled it, it would strike his leg inside, of course.

Q. And his right leg was on the Ewa side of the track and his left leg on the Waikiki side of the track, which leg would be struck on the inside?

A. It would strike the leg on the side.

Q. Which leg? A. Which way was he facing?

Q. Eastward.

A. Then it would strike his right leg.

Q. What effect, if any, would that have upon the man, the slipping of the cable and striking the leg?

A. Why, it would throw him off undoubtedly, throw him off and undoubtedly seriously hurt him.

Q. Off the side? A. Off the side.

Q. In which direction? A. Ewa.

A JUROR.—Would that box immediately take up the slack [692—610] that was occasioned by the displacement around the four makai pulleys of the series of eight?

(Testimony of J. M. Young.)

A. Do you mean instantaneously?

Q. Yes, almost instantaneously.

A. Well, with a bight in a cable with that much pull out of alignment, say, perhaps, two or two and a half feet the effect of the weight would be to take it up as quick as you get motion, of course, it would not be instantaneously, it would not be like that, but it will do it, though, in a second.

A JUROR.—Mr. Young, suppose there are four or five cars upon this end of the conveyor?

A. On this side?

Q. There are four or five cars attached, say empty cars, and that cable slipped off there as Mr. Sutton described, would it snap it up that quick to take a leg from under the man?

A. Yes, I think it would undoubtedly.

Q. The weight would have to pull all those cars back while they were loaded cars and empty cars both?

A. Well, no, not necessarily; there is a certain amount of give and take on a cable-way and it is not a gearing that is positive, it is not like a gear you know that meshes in with another gear, there is a certain amount of slipping and movement can take place and if the cable is released at that point it undoubtedly will fly over whether cars are gripped to it or not. In fact the tension there would be sufficient to cause a slight slipping going on constantly. You understand that these grips do not take up the car immediately; the grip is tightened and the car begins to move slowly, the cable slipping through the

grip and it is not a sharp taking hold.

Q. If the engine is supposed to be stopped, wouldn't they have to turn that engine to turn the drum the way that you have got there—the one they have got there would have to move all the cars to slip the cable in the grip and turn the engines?

A. Yes, turn the engines down there, but you understand a [693—611] very small movement down there, would do it, it does not take very much.

Q. A small movement of the engine, a backward motion? A. Yes, sir.

Q. What was the matter with the engine at that time?

A. The engine is stopped; is that correct?

Q. The engine was stopped?

A. Yes, that is the way you put the question.

Mr. SUTTON.—Then, as I understand you, the tension on the pulley at this point on the eight pulleys, the tension to the cable is on the inside of the circle which at this point is the outside of the track?

A. Yes.

Q. And the tendency of the cable in case it came off all of the eight pulleys would be for it to assume a straight line and that straight line would be at a point on the outside of the track? A. Yes.

Q. On the Ewa side?

A. Yes. If that were not true the pulleys would not be placed in that position. They are placed in that position for that purpose, to resist that kind of set.

A JUROR.—Mr. Young, do I understand you to

(Testimony of J. M. Young.)

say that the box here would take up the slack at the makai end there in about one second?

A. It will immediately take all of it up. When a large slack occurs like that, the rope will fly over very quickly. It will not come to a dead stop, it will fly over again and then get back comparatively like the string of a fiddle. There is a certain amount of slack there all the time.

Q. The cable if off the pulleys there, how long would it take for the box to take up the slack from the makai end?

A. Oh, it would be in a few seconds.

Q. That box would take up the slack of twenty-five hundred feet of cable in a few seconds?

A. Yes, sir. [694—612]

Mr. SUTTON.—If a man was standing in the position I have indicated astride of the track and astride of the cable and was struck by the cable would it require a large amount of tension in the cable, a great blow, to disturb the man's balance in that position or a slight amount?

A. Well, I say a man balanced up in that position would not take a great force to unbalance him and the cable in flying off would certainly exert sufficient force for that.

Q. Mr. Young, I think you have stated, I am not sure, the effect upon the broken wires in the cable when the broken wires come in contact with the pulleys on the curves and also the effect of the broken wires on coming in contact with the shoe part of the grip on the various cars, assuming the

cars to be at rest and the cable sliding through the shoe. As I recall your answer it was that the broken wire when on coming in contact with the pulleys on the curves, be flattened and that on the side or at the point where they came in contact with the pulleys and that in the shoe they would also be flattened out. Now, what would be the effect upon the broken wires sticking out from the cable by coming in contact with the drum?

A. The drum of the engine?

Q. Yes, the drum of the engine?

A. Why, they would be smoothed out in much the same way. They will always cut and scratch up and abraid the surface of the iron drum.

Q. Which would come off the more quickly from the pulleys on the curve, a new or old cable?

A. I believe—

Mr. DOUTHITT.—He has answered that?

A. I think I did. However, I have no objection to answering it again.

Mr. DOUTHITT.—Under what circumstances?

Mr. SUTTON.—Under ordinary circumstances.

Q. Assuming those things to be the occasion for the cable coming off, would it come off more easily with an old or new **[695—613]** cable?

A. I think a new cable could be removed more readily than an old one.

Q. In your opinion, Mr. Young, would a cable with wires broken and sticking out at intervals throughout the length, sticking out at a distance say anywhere from one-sixteenth to an inch be fit for

(Testimony of J. M. Young.)

use in this conveyor?

A. If that is the only thing that is the matter with it, I should say yes. That would not invalidate its usefulness.

Cross-examination of J. M. YOUNG.

Mr. DOUTHITT.—Then there would be no necessity for throwing it away, Mr. Young, a cable like that or replacing it with a new one then, provided that the dollies and the pulleys were all right, other things being equal?

A. Well, you understand that these—this effect is a preventive thing, first there is one wire broken, then another one, another one and another one and finally there is a point reached where the wear on the pulleys, the dollies, the grips becomes considerable and they are not able to retain the cable in use because of the wear.

Q. Then a cable like that could be used with wires sticking out throughout its entire length. This cable was twenty-eight hundred feet long, Mr. Young. A cable of that kind could be used for several months, could it not? A. Yes.

Q. It could? A. Yes.

Q. With a perfect degree of efficiency?

A. Except the wear on the pulleys.

Q. Excepting for the wear on the pulleys?

A. Yes, sir.

Q. Otherwise it could be used with perfect efficiency for **[696—614]** a period of several months?

A. Until the cable were reduced in diameter so that the grips would not operate properly.

(Testimony of J. M. Young.)

Q. That would take some time, wouldn't it?

A. Yes, it would.

Q. About how long?

A. Well, I should say that the economical life of a cable working under those conditions would probably be about eighteen months.

Q. Then, if this cable was in use for ten months, Mr. Young, the cable was perfectly good for eight months longer, for economical use?

A. In general terms I should say, yes.

Q. Providing that it had wires sticking out all the way from one-sixteenth of an inch up to a quarter of an inch—up to an inch throughout the entire length? A. Provided, did you say?

Q. If it had those wires sticking out?

A. Well, I should answer that in this way that it would be useful in spite of the fact that it had the wires sticking out.

Q. Yes, but I am asking you aside from the pulley question—from the question of the pulleys which you say wear down by using a cable of that description. Aside from that, you having said that the life of a cable according to your observation was eighteen months if the cable had been in use ten months it was good for the other eight, was it not?

A. Yes, it is reasonable to expect that it would have that additional life.

Q. Will the grip slip on a new cable more readily than on the old one?

A. Well, that would depend somewhat on the condition of the grip. If the grips are in perfect

(Testimony of J. M. Young.)

condition, there will be very little difference.

Q. Well, don't you know, Mr. Young, that the grips on an old cable will take hold quicker than it will on the new, due to the obstruction of the wires that come out?

A. Depending altogether on the condition of the grips.

Q. Depending altogether on the condition of the grips. Now, **[697—615]** I am calling your attention—as a matter of fact there is a difference between the condition of the cable where the wires are projecting and the cable which is worn smooth, is there not? You have seen cables that were worn smooth, very smooth, it would be worn down here, worn down there and so on as it goes around?

A. Yes, sir.

Q. That cable would not cause the wear of the grips as much as a new cable would—on the pulleys I mean, a cable which was worn smooth?

A. Well, there is a point there where the wear is less, yes.

Q. How is that?

A. There is a point at which the wear is less and I think the period at which the wear is least is when the cable is perfectly smooth.

Q. The wear is least when the cable is perfectly smooth? A. Yes, sir.

Q. Then, that cable for example, accomplished that purpose better than a perfectly new cable, a cable which had been worn down by use?

A. Yes, I should say that a cable would wear the

pulleys most when it is put on new than in its later period of life.

Q. A cable that has been worn perfectly smooth would that increase the wear on the pulleys?

A. No, I think not.

Q. It would not? A. No.

Q. But a new cable might, you say, increase the wear on the pulleys?

A. Well, I think the wear would be greater, in fact, I know it is greater, with a cable, the surface of which is rough?

Q. The surface of which is rough? A. Yes, sir.

Q. Do you mean that this is a rough surface?

A. Yes, that is rough, it is corrugated.

Q. Do you know the average pulling strength of a cable? A. Yes. **[698—616]**

Q. What is it?

A. Why, it depends altogether on the factor of safety which is employed. Ordinary use in cable ways we allow a factor of say three or four or five for hauling a load. With the Hunt cable supporting the load and a Roebling, the factor would be less.

Q. What is the ordinary use to which a cable such as was used on this conveyor, could be subjected?

A. Well, I should say that the strain would probably vary from a thousand to fifteen hundred pounds.

Q. I don't mean that, how many tons, for example, is capable of being carried over hauling—the cable capable of hauling, working?

A. Well, as a general rule the load which is pro-

(Testimony of J. M. Young.)

pelled is about one-fifth of the propelling force.

Q. Well, I am not asking you that, Mr. Young?

Mr. STANLEY.—Had you finished?

A. No, I had not quite finished, however, I am willing to be interrupted.

Mr. DOUTHITT.—I don't think that you quite get me. How many pounds would a cable such as the one on this coal-conveyor, *capable* of hauling just exactly as this was done, how many tons rather?

A. Well, that cable before it was worked, in a new condition, would be capable of standing a stress of say forty thousand pounds. In accordance with the usual rules for such work it would exert a tractive effort on a load of cars, yes, a string of cars, and the gross weight of that string of cars would be approximately five times the forty thousand pounds or roughly speaking, two hundred thousand pounds or one hundred tons, so that that cable would be capable of moving a dead load of a hundred tons, that is, if you were designing a cable, those are the figures you would have to go back to.

Q. I did not mean that, Mr. Young, I did not mean how many tons that it would be capable of hauling at one particular time, but I mean if you used a cable every day or used it for **[699—617]** six or eight or ten months or a year, how many tons would be the carrying capacity, how many tons could it haul before being discarded as useless?

A. Oh, I should say that that cable ought to haul about one hundred or one hundred and twenty-five thousand tons, something like that.

(Testimony of J. M. Young.)

Q. About a hundred or a hundred and twenty-five thousand tons. And that was a Hunt, a Hunt coal-conveyor and the Hunt cars were being used on it and the Hunt tracks were being used. Don't you know Mr. Hunt—Mr. Young, that Mr. Hunt gives the life of a cable five months with a carrying capacity, an entire carrying capacity of one hundred and fifty thousand tons?

A. Well, I know that there are certain tabulated data published by the Hunt Companies, but I was not aware of the exact figures, I had not looked them up especially.

Q. Yes, but you were employed by the Hunt Company, were you not? A. No.

Q. I thought you said that you had been employed by the Hunt Company?

A. No, I did not say that.

Q. And you are not aware of the fact that Mr. Hunt, in his work, makes the statement that each cable handles about one hundred and fifty thousand tons of material and will last about five months?

Mr. SUTTON.—The witness has stated that he did not know anything about what was in Hunt's catalogue.

Mr. DOUTHITT.—Is it a fact, Mr. Young, that a cable such as in use upon this coal-conveyor, is only capable of carrying one hundred and fifty thousand tons, hauling one hundred and fifty thousand tons and is good for only a period of five months, is not that so?

A. Well, that is not the statement that I made.

(Testimony of J. M. Young.)

It is my opinion that a cable of that kind might be reasonably expected to last say eighteen months under conditions in which it is being used here, and that you might expect to [700—618] move about one hundred and twenty-five thousand tons on it for an average. It might move less or might move more, depending on the way the plant was managed. Whether the cars were full or not, and they were overloaded, all matters of elaboration, adjustment of the cable way and a number of other factors that affect its operation.

Q. All of these things have a certain effect and are a factor in the life of a cable, are they not?

A. Yes, sir.

Q. And then when you made the statement that the life of the cable was eighteen months, you meant that with the very best care and very best treatment it ought to last eighteen months?

A. Well, I mentioned that as a reasonable expectation.

Q. That is a reasonable expectation. You would be surprised, would you, Mr. Young, if the cables down there had only lasted for eight months, would you? A. Not at all, not the slightest.

Q. You would not?

A. That would not surprise me at all, because there is a variation in the manufacture of articles of that kind and a cable of one manufacture might last twice or three times as long as the other, a cable looking just like it, and a cable which you could not tell the difference.

(Testimony of J. M. Young.)

Q. Then, there is no stated or fixed way by which the life of a cable might be judged or stated?

A. There is no exact rule, it cannot be exactly shown, it cannot be estimated with any exactness.

Q. One cable may be good enough to last five months and another cable run along for fifteen months?

A. Well, the five months I don't altogether agree with you on that point. I think Mr. Hunt probably in making that statement, referred to continuous operation. Where a cable is in use intermittently they would naturally last longer.

Q. Yes.

A. Of course, you can easily see that **[701—619]**

Q. Certainly.

A. Well, that is the point. I presume Mr. Hunt *made* a power-house where coal was being supplied to a set of boilers operating say twenty-four hours a day. This coal-conveyor operated continuously.

Q. Yes, but, Mr. Young, the question we will eliminate the five months then, it would be perfectly natural to expect one cable to only last eight months we will say and you might find a cable to last fifteen months? A. That is my opinion.

Q. So, therefore, there is practically no fixed standard so far as the life of a cable is concerned only from actual experience as you see them installed?

A. Well, if we are considering the two cables, say first, we place one, a crucible steel cable, six strands, nineteen wires to the strand, on a cable way and

(Testimony of J. M. Young.)

operate for twelve months constantly and remove it? *A.* Yes.

A. It will be perfectly reasonable to expect a similar cable of the same manufacture, of the same characteristics, identical in every way to last that same length of time. I agree with you on that.

Mr. DOUTHITT.—There is only one way of telling, by the installation. The only thing that you can reasonably expect, Mr. Young, is you would reasonably expect of a similar cable, that is the only thing that you can state, is it not, with directness?

Objected to as already asked and answered.

Q. Do you understand the question?

A. Well, I have answered the question already, you have twisted it around into another shape. I have already answered the question.

Q. It is only what you might expect, then, from comparing one cable to another?

A. Let me give you an illustration.

Q. I am asking you that.

A. Why, yes, it is a matter of reasonable expectation, for this reason that conditions are changing all the time. For example, one of the operatives might use a crowbar to shove the cable around for some purpose and in **[702—620]** process of the work he might break some of the strands in the cable and weaken it and fray it out, and then again the splice of the cable may work loose. You understand these cables, these endless cables, they are put together by splices in the middle and those splices give trouble, the ends come out and affect the cable that way.

(Testimony of J. M. Young.)

That might affect the life of the cable if there are many factors which affect it.

Q. What is the weight of a cable such as it used on this coal-conveyor of a Roebling cable, three-quarters of an inch in diameter, nineteen wire, six-strand, steel cable, twenty-eight hundred feet long?

A. I can figure it out for you in a few minutes, I do not carry those facts in my head. Well, I can answer that in this way—

The COURT.—Give it to counsel by the foot and he can figure it for the twenty-eight hundred feet.

A The weight of a bar of wrought iron or steel an inch square, an ordinary foot inch is three and one-third pounds. Now, I would say that that was approximately—that that is approximately three-eights of a square inch in cross section, so multiplying three and four-tenths by three-eights that ought to weigh about approximately a pound to the foot.

Mr. DOUTHITT.—A pound to the foot?

A. About that.

Q. We will say about that. Then the entire weight of that cable would be twenty-eight hundred pounds? A. Approximately so, I should say.

Q. Do you know the capacity of each one of these cars, carrying capacity?

A. No, I do not, probably—they vary quite a good deal, you know. I guess that is probably three or four thousand pounds.

Q. Well, do you know the weight of the car?

A. That would probably be also in the neighborhood of five or six thousand pounds.

(Testimony of J. M. Young.)

Q. Weight about three tons, each car loaded?

A. Loaded **[703—621]** about that I should say.

Q. Loaded with coal about three tons? You made the statement here on direct examination, Mr. Young, that if the weight were raised that you would observe the slacking each side of the weight, did you not? A. Yes, sir.

Q. Did you mean that when the cars were loaded or unloaded?

A. Well, I think that would be the condition in either case.

Q. Gripped or ungripped? A. Yes.

Q. Either gripped or ungripped? A. Yes.

Q. How do you know that that weight weighed nine hundred or a thousand pounds?

A. Oh, I know that from my knowledge of such matters.

Q. Where did you first see it?

A. This particular weight?

Q. Yes.

A. Oh, I must have seen that particular weight five years ago, something like that.

Q. Five years ago? A. Probably six.

Q. Did you go down particularly to examine it as to how much it weighed? A. No.

Q. Then you are just simply estimating?

A. Yes.

Q. It may have weighed only five hundred pounds?

A. Well, I doubt very much if the cable-way would have operated satisfactorily with that weight.

(Testimony of J. M. Young.)

Q. Mr. Young, I will ask you as a matter of fact if the purpose of that weight is simply to take in the slack as the cable goes around the drum, is not that the purpose of the weight?

A. That is one of them, yes.

Q. That is one of the purposes of the weight and the main purpose of the weight, is it not, it is the automatic taking in of the slack?

A. Yes, sir, you can state that I think.

Q. That is the main purpose of the weight?

Q. That is one of the features of the Hunt patent. [704—622]

Q. That is one of the features of the Hunt patent. And don't you know, Mr. Young, that that weight was not in use five years ago?

A. Why, as I stated, I visited the cable-way five years ago and it was a Hunt cable. I did not go around to examine all these little details minutely and I did not go over it with a microscope to examine each little detail on it. I presume, though, it is working there, they usually are.

Q. And in your opinion—did you look into the box to see what was in there? A. No.

Q. You don't know what was in the box?

A. Very likely there was broken stone or sand or car wheels or something like that. That is what is usually put in.

Q. And a five hundred pound weight there would be capable of taking in all the slack necessary at that box, wouldn't it?

A. I wouldn't like to make that statement, no.

(Testimony of J. M. Young.)

Q. Well, what do you mean?

A. I mean just what I said, that I think the weight of the box was probably in the neighborhood of nine hundred or a thousand pounds.

Q. Well, now, would a box—would a box with only five hundred pounds weight in it be capable of performing the functions required of it, namely the automatic taking in of the slack?

A. It might to a limited degree, I would not like to guarantee its satisfactory operation.

Q. When the car is being operated and the cable in passing over here, which way does the weight go, up or down, when the car is going along?

A. When the slack is being taken up the weight comes down and when cars are being gripped and the strain is put on the cable the tendency is to lift the weight up.

Q. When you grip the car up here after ungripping it, after you grip the car you get slack, don't you? A. There will be a little bit of slack, yes.

Q. Where does the weight go, up or down?

A. It would tend **[705—623]** to drop in order to take up the slack.

Q. You said up a little while ago when you gripped the car, you said that the weight would go up?

A. It might, yes, it all depends altogether on whether it is down where the car is. You understand one of these cable-ways is rather a complicated piece of mechanism and a person that knows nothing at all about it is apt to form an erroneous impression. You have got to study it; it is rather a

(Testimony of J. M. Young.)
complicated piece of mechanism.

Q. Let us study this conveyor, Mr. Young. This cable comes down through this shaft as you say here, then it is wound four times around that drum, is it not? A. Yes, about that.

Q. Well, as you observed it at the time?

A. About that.

Q. I want to be positive about this, Mr. Young, was it wound around the cable—how many times, if you know, around the drum?

A. About four times.

Q. Then it is taken up around this sheave as you see it here, coming down around the sheave of the weight, then up through another sheave and through the floor out in the same direction? A. Yes, sir.

Q. As the hauling cable, the same direction, is it not? Is not that correct? A. Yes, I believe so.

Q. I have not misstated it?

A. Ask it again, please.

Q. If I make a mistake, please check me. The cable I am illustrating on the model shown goes down the sheave at the point marked B, does it not?

A. Yes, sir.

Q. Then leading from the point marked B runs down under the coal-conveyor and is wound around the drum four times, is not that correct? A. Yes.

Q. Then it leads from the drum up to the sheave upon which the weight is suspended?

A. That is correct.

Q. And down through the sheave at the top of the weight and [706—624] up through the other

(Testimony of J. M. Young.)

sheave and then out at the point marked R we will say? A. Yes.

Q. Then it continues its way along in the same direction as the cable was going down to the sheave at the point marked B? A. Yes.

Q. That is absolutely correct. Now, I will ask you to try and explain, Mr. Young, by reference to the model how it is possible for the slack to be distributed on both sides, in a mauka direction and makai direction of this coal-conveyor by lifting that weight, taking into consideration the construction, stopping the engine, lifting the weight—

Mr. SUTTON.—No.

Mr. DOUTHITT.—Yes, lifting the weight. Just show us how it is possible to have slack distributed on the makai side, makai of the scale-house?

A. Well, the first thing, of course, that is noticeable on lifting the weight is that these cables must pass each other and tend to make the effective length of the cable greater and the process of lengthening the cable will produce slack.

Q. No, I mean—

Mr. STANLEY.—Let the witness explain, do not interrupt.

A. It is a very simple proposition, it is simply a physical fact, that is all.

Q. I know, Mr. Young, it is very simple, probably, to you, but it is not quite so simple to me. I must confess that I am a layman and I don't understand that.

A. You lift the weight.

Q. Yes, I lift the weight?

(Testimony of J. M. Young.)

A. That reduces the tension.

Q. Yes, it reduces the tension?

A. You understand that each little part of this cable is essential to the other parts.

Q. That is right.

A. Continue that process follow it down, knowing that a stress is distributed along any elastic [707—625] limit and you can follow the stress along the cable and that will distribute itself over the full length.

Q. With twenty cars loaded and coaled?

A. I don't care whether you have them all over the cable.

Q. Don't you know that the physical fact is that you would have to turn that drum back before you can get any slack because your drum is going to the right and your cable is going to the right just as I have them there, is not that a fact, Mr. Young?

A. Well, I don't admit that statement.

Q. Well, please explain, then, why you don't admit the mechanical construction?

A JUROR.—It is not clear to me how you can get the slack on both sides of that cable as it goes up on the platform there, because it seems to me a mechanical impossibility. Of course, I may be mistaken.

A. The facts of the case are these: Stopping the machine and taking a piece of chalk and marking on that cable putting a chalkmark on it and you can easily see on making a mark on the floor there and then lift the weight you will find that one mark will move this way and one move this way.

(Testimony of J. M. Young.)

Q. That the cable will pass over the drum or the drum will move sufficiently?

A. There is sufficient movement possible for that.

Q. In the drum alone of the steam engine the same as that weight?

A. Throughout the entire system. Understand that the drum does not need to move very much, it will move only a very little bit.

Q. Could you move that drum backwards a quarter of an inch backward on a steam engine?

A. Yes. And then the belt is not absolutely tight, it is not a positive connection.

Mr. DOUTHITT.—Q. With four turns around that drum it is not absolutely tight?

A. You will find the cable will distribute itself. [708—626]

Q. The movement of the cable wound on that drum four times and wound in an opposite direction to the movement backward of the engine will give you movement forwards on the other side?

A. There is sufficient flexibility in this system to admit of this movement. That may not be quite clear to you, it is a fact, and if you wish to convince yourselves of it you could easily examine the cable-way. I think that would satisfy you.

Q. I think that is the only thing that would satisfy me. Now, Mr. Young, just go on on that point. In order to get your slack at this end of the conveyor, it would mean, would it not, if that slack was apparent on both sides of the scale-house, it would mean that the slack at the drum would have to revolve and

go up in the other direction, would it not, is not that a mechanical factor from this very model?

A. Well, not necessarily, no.

Q. Well, how could it become, Mr. Young, if you will kindly explain to the jury how it could be done. I must confess that I cannot see how it could be done, but I am willing to learn.

A. Well, the explanation of it lies in this fact, that a cable-way is an extremely flexible mechanism and is the reason that a takeup of this magnitude is placed there. It is a takeup that will take up perhaps eight or ten feet of slack, that is why it is placed there because these variations do occur.

Q. But, Mr. Young, flexibility or no flexibility, you could not get that drum to revolve and take up the slack at that drum where it is wound around four times, you would have to make an air compressor out of your cylinder there, wouldn't you?

A. No, it would not be as bad as that.

Q. Just one minute, when you stop the engine, Mr. Young, as she drives she gives a start and gasps like that and it forms a vacuum in the cylinder, does it not, when you shut off steam?

A. Well, usually the leakage around a piston is sufficient [709—627] to obviate the formation of a vacuum.

Q. But when you stop—she is pushing backwards and forwards like that, the piston is inside the cylinder when you stop an engine suddenly it practically forms a vacuum in the cylinder, is not that a fact?

A. Well, if you shut steam off of the cylinder and

(Testimony of J. M. Young.)

the cylinder were airtight so that it would be impossible for air to get in it and you waited long enough for the steam to condense, then I will admit that there would be a vacuum or at least a partial vacuum formed.

Q. And in order then, Mr. Young, to start this business up, let *got* and get a slack on the makai side of the scale-house you would have to overcome that vacuum and make an air compressor out of it, wouldn't you, and have to send it around in an entirely different direction or it would be impossible to get it there?

A. Your own statement disproves itself, you speak of a vacuum.

Q. Yes.

A. You cannot make an air compressor of a machine when there is no air in position to be compressed, there is no air present. Therefore, you cannot compress it. It is supposed according to your statement that it is a vacuum.

Q. It is the suction, is it not, that stops the engine from continuing to revolve?

A. No, I would not like to say that.

Q. What is it then?

A. Why, it is the friction of this system's moving weights and cars on pulleys which causes it to stop.

Q. Is that all?

A. Well, it is the force of gravity acting on the cable.

Q. Is that all?

A. Those are the principal factors.

(Testimony of J. M. Young.)

Q. How is that?

A. Those are the principal factors. In fact the point that you make there I think you are somewhat overestimating, you magnify it, because it is nothing like as [710—628] great as you say. You understand that the valves of an engine when the engine stops open to the outside atmosphere and there is only one position there at which you can get compression. On examining an indicator card, I presume you are familiar with it, but I can show you with a piece of paper.

(Witness illustrates with pencil and paper.)

(Continuing.) Now, here is an indicator card, or rather a diagram of one. This would be the line of zero pressure; well, we might call it an atmosphere line for ordinary purposes. Assuming that this is a non-condensing engine, this is the point where the steam would be admitted to the cyclinder, the steam would be cut off at that point. At a quarter or half stroke, it may be a quarter, a half or two-thirds from that point down here the steam expands and does work by virtue of its expansion or elastic force and the pressure drops correspondingly from this point which would be the point of admission. And on that system down there I will make a rough guess at it, a hundred pounds, it might be one hundred and twenty-five or one hundred and fifty, assume that is it, it would drop down at least down here, and say there is five point above atmosphere. Now, at that point the exhaust valve of the engine is opened so that the steam which is contained in the cylinder and

(Testimony of J. M. Young.)

which has expanded from this volume up to that volume may escape. The steam then begins to escape and it escapes from that point back to this point at which the exhaust valve closes and the steam can no longer escape being enclosed within the cylinder with a couple of valves to hold it. Then from here to there compression occurs and the compression within the cylinder of the steam engine is very, very small, it is purposely made that way so as not to absorb any of the power of the machine. Now, if a cylinder were made a little differently, if the valves were constructed on a different principle, such as, for example, of an air compressor to which you refer, you could then use up [711—629] the power in that way. But with a simple slide valve engine, such as this probably was, it is my opinion that you could not use it as an air compressor. I don't think that would be possible. It certainly would *not a* good illustration of an air compressor.

Q. Would it act as a vacuum pump?

A. There would be a slight tendency for vacuum to form between the point at which the exhaust valve closes and the point at which the admission valve opens. But you must take into consideration that that vacuum could not form until the temperature of the steam dropped down to about—well, it would begin to form at about two hundred degrees and the temperature of the steam being very much higher than that your vacuum could not form. The temperature of steam at ——— pressure is about two hundred and twelve and the temperature of steam

(Testimony of J. M. Young.)

under those conditions would be considerably higher than that according to the pressure it would be perhaps thirty degrees higher than that, you could have no vacuum. But if you cooled the steam by putting a jet of water on it and cooling it off on this small portion of the stroke, well, perhaps, from one-tenth or one-twelfth of the stroke you would get compression, but there would be factors that would militate against a vacuum there, because the valves would be operating backwards and would not be so tight as when operated in the other direction.

Q. What would be the force required to revolve that drum in an opposite direction to which it went?

A. With the weight lifted?

Q. Yes, with the weight lifted?

A. Well, with the weight lifted it would not take so very much to revolve it.

Q. This weighs twenty-eight hundred pounds, this cable does, Mr. Young, these cars weigh three tons apiece when they are loaded and one ton apiece when they are not loaded, when they are unloaded. What would be the force if there were cars on that [712—630] track, twenty cars on that track distributed at different portions around the conveyor, some loaded, some unloaded, what would be the force required to revolve that drum in another direction and cause the cable to reverse? A. The cars are stopped?

Q. I am going to stop those cars, I have rung the bell. A. And you have lifted the weight?

Q. And I have lifted the weight.

A. When you have lifted the weight the effect is to

(Testimony of J. M. Young.)

release the tension, is it not?

Q. The tension is, of course, released in the immediate vicinity of the weight, Mr. Young. The tension, of course, is released there, what would be the force required in the event that you lifted that weight with twenty cars around this track, some loaded and some unloaded, at different portions around the conveyor to reverse that drum and make it go in the opposite direction?

Mr. STANLEY.—That is assuming something that Mr. Young has not testified to.

The COURT.—He has not testified to the drum going in an opposite direction there.

A. That would be a physical impossibility because a cable is capable of transmitting force in one direction only, it is not capable of acting as a strut, it can only act as a tension member.

Mr. DOUTHITT.—I thought so and asked the question in order to get the slack at this end. *I* would be necessary, would it not, to make the drum reverse? A. No, not at all.

Q. Why, how could you get it?

A. Why, you understand with the weight lifted there a light slipping can occur.

Q. How can it occur in the makai direction. It would occur very easily, we understand, in a mauka direction toward the coal-yard but where could you get it in the makai direction away from the coal-yard, that is the point that I am after? [713—631]

A. You understand that it does not require very much lengthening in a cable to produce that?

(Testimony of J. M. Young.)

Q. How is that?

A. In the machinery such as you have referred to it does not require very much lengthening to produce slack. Say that is the railway and that is the conveyor, the cable comes over and sags down like that. Now, that may sag down a couple of inches there, in order to sag down a couple inches it does not involve very much change in the length of the cable.

Q. That is not the point I wish. You and I do not get at the right point at all the way it is constructed. I don't mean the sag where you are drawing it, but how is it possible the way this coal-conveyor was constructed to get that slack makai of the scale-house by raising the weight?

Objected to as already asked and answered.

Mr. DOUTHITT.—I will ask Mr. Young as a matter of fact, as we stand here and we look at that coal-conveyor and as we look at the way that cable is wound around the pulleys and the various sheaves, taking into consideration the direction of the cable, if it is not a physical impossibilty to get a slack makai of the scale-house by lifting the weight, if it is not a physical impossibility? A. No.

Q. Is not that a fact, Mr. Young?

A. No, it is not.

Q. Will you kindly demonstrate how it can be so?

Objected to.

A JUROR.—I cannot understand it.

The COURT.—Kindly answer the question, Mr. Young.

(Testimony of J. M. Young.)

A JUROR.—That drum revolving pulling the cable produces friction?

A. Yes, sir, you know the action of that drum is somewhat analagous to the action of a nigger-head on the end of a shaft of a hoisting-engine. I presume you are familiar with that, most men are who have seen such things operate. In pulling [714—632] a rope with a nigger-head on the end of a hoisting end or shaft, the rope, you understand, is wrapped around the nigger-head and the nigger-head revolves and usually a man stands on the back side and maintains a slight tension on the back side of the rope and when he wants to stop pulling he releases it, doesn't he, that allows the rope to slip. That is a very delicate adjustment and it is possible there by slight variation on the tension of this mechanism to permit of slippage on that drum, in the same way that slipping can ocur in a nigger-head of a hoisting-engine and I think that you will find that that is what happens.

Q. Is the weight of the cable heavy enough to slip?

A. Well, now, don't get confused on the weight of the cable, that has nothing at all to do with it. The weight of the cable is merely incidental and has nothing at all to do with this question because the weight of the cable is so extremely small as compared with the stress which that cable is capable of maintaining. The weight of the cable does not affect it materially, it is not a part of the program.

Q. What would make it go slack around the drum if not the weight of the cable?

(Testimony of J. M. Young.)

A. Releasing this cable and lifting that weight releases the tension on the back side does it not?

Q. Yes, but if you hold the cable, say mauka of the drum, you hold it there as in a vise and lift your weight it would not go back, would it?

A. Well, it is not possible for a cable to exert any considerable force by comparison, that is the cable itself would not revolve the drum.

Q. There is no tension on it when the thing is stopped, is there?

A. Well, there is a tension exerted until it comes to a dead rest.

Q. But if the cable is stopped there is no tension there is there?

A JUROR.—Mr. Young, would the drum itself revolve backward [715—633] or would the cable slip, the four rolls around that drum, would that loosen up as it were and loosen slip around that drum in order to allow that slack?

A. That is possible with the weight lifted in the condition that Mr. Douthitt has mentioned.

Q. The weight lifted would give it the slack back of the box, the rolls around the drum would loosen up?

A. It has a tendency in that direction, and it is possible, as I say, for the movement to occur.

Q. Not necessarily the drum would have to rotate backwards, too?

A. Slip around on it when the weight is lifted.

Mr. DOUTHITT.—The slack going in both directions, Mr. Young, from the drum?

(Testimony of J. M. Young.)

A. Well, Mr. Douthitt, that is what actually happens.

Q. I am asking you, I don't know anything about it myself.

A. I think you have demonstrated that. The facts are that the cable moves in both directions.

The further hearing of this cause was continued until 8:30 A. M. Tuesday morning. **[716—634]**

In the Circuit Court of the First Judicial Circuit, Territory of Hawaii.

JANUARY, 1914, TERM.

GEORGE E. WARD,

Plaintiff,

vs.

INTER-ISLAND STEAM NAVIGATION COMPANY,

Defendant.

June 16th, 1914.

[Testimony of George P. Dennison, for Defendant.]

Direct examination of GEORGE P. DENNISON, called for the defendant, sworn.

Mr. STANLEY.—Your name is George Dennison? A. George P. Dennison.

Q. What position do you hold?

A. Superintendent, Oahu Railway & Land Company.

Q. How long have you been superintendent?

A. Since 1893.

Q. What experience, if any, have you had with

the use of machinery and appliances of a mechanical nature?

A. Well, in the way of supervision of such work which naturally falls to the superintendent, with this position as superintendent of the Hawaiian Dredging Company for years,

Q. How many years' experience have you had in this line?

A. Well, really, since 1889, I have been connected with this sort of work for the railroad company.

Q. You did not take a technical course at any institution? [717—635] A. No, sir.

Q. Mr. Dennison, have you ever had occasion to examine the coal-conveyor plant of the Inter-Island Steam Navigation Company here in Honolulu?

A. Yes, sir, I visited the plant last Saturday morning.

Q. And before that time had you ever observed the plant?

A. Not to go on the plant only as I passed along the street.

Q. Now, last Saturday morning, did you make any —in the presence of other persons, any experiment with regard to the cable, the drum and the other appliances on that coal-conveyor plant?

A. I watched with the others certain things that were done.

Q. Who was present at that time, Mr. Dennison?

A. Yourself, Judge Stanley, Mr. Sheedy, Professor Young, and the men who seemed to be running the plant, I don't know them by name.

(Testimony of George P. Dennison.)

Q. And this was Saturday morning?

A. Last Saturday morning, yes, sir.

Q. Did you make any observations in the engine-house where the drum is located upon the lifting of the weight and the stopping of the cable?

A. I watched the action.

Q. Describe, Mr. Dennison, if yau can, what you observed with regard to the cable in connection with the drum upon the stopping of the engine and the lifting of the weight?

Mr. DOUTHITT.—That is objected to, the conditions are not shown to be the same last Saturday as they were on the 8th day of July, 1912.

Objection overruled. Exception.

Mr. STANLEY.—Do you recall the question?

A. You mean the drum, that which moves the cable?

Q. Yes.

A. Which is driven by electric motor by means of a belt?

Q. Yes.

A. And when the motor was stopped— [718—636]

Mr. DOUTHITT.—There is another objection, we claim there is a difference between an electric motor operating the cable and steam power.

Objection overuled. Exception.

A. After the order given to stop the motor which was followed, the thing stopped, then there was an order given to lift the weight and as the weight was lifted the turns on this drum slackened up.

(Testimony of George P. Dennison.)

Q. The turns upon what?

A. The turns of the rope around this drum and released away from the drum.

Q. By the rope you mean the steel cable?

A. The steel cable.

Q. State whether you observed that it slipped on the drum.

A. We were looking at it when it was released and it seemed to release back from the roller part.

Q. Was there any attempt made by you or others to make any mark which would tend to indicate any definite amount of slack of the cable?

A. Yes, sir, there were chalkmarks made across the strands and opposite on the flange of the drum.

Q. With reference to those chalkmarks across the strands of the cable and on the base of the flange state what you observed.

A. The rope, the wire cable went back, that is opposite to the way it was being hauled by the cable.

Q. Was there any attempt made to turn the drum after the weight had been lifted?

A. Yes, it was turned by pulling on the belt pulley wheel, a large pulley wheel, the one which is driven by the belt.

Q. By electric power or what way?

A. By the hands. We turned the drum very easily with one hand on this pulley.

Q. What did you observe with regard to the cable on the drum when the drum itself would revolve?

A. It practically remained stationary, the drum turning within the turns of the cable. **[719—637]**

(Testimony of George P. Dennison.)

Mr. STANLEY.—What?

A. Turning within the turns of the cable.

Mr. SUTTON.—Now, calling your attention to the condition of the cable on the track near the scale-house was there any experiment made at that point to observe the effect upon the cable of raising the weight? A. Yes, sir.

Q. Describe that.

A. When the cable after we observed down below was started in operation again and running, then stopped.

Q. What, if anything, was done with reference to the weight?

A. They sung out to them to lower the weight before this was started up and the cable ran around then and stopped and marks were put across the two cables where they lie parallel alongside of each other, then on the floor opposite this and then the order was given to raise the weight and then the marks moved, the cable with reference to the marks moved.

Q. Can you indicate on the model approximately the position where these experiments were conducted. I call your attention to what appears to be the weight.

A. The marks were made somewhere in the vicinity of this scale-house. We put a chalkmark on the cable and on the floor under the cable without lifting the weight, and then on lifting the weight the cable moved away from its mark on the floor. The same thing occurred when the cars were attached and the

(Testimony of George P. Dennison.)

marks made, they made but a little difference. When there were no cars attached they moved about equal distances from this mark, about five inches. When cars were attached to the cable, the cable moved this way.

Q. Which way do you mean?

A. Assuming that to be the sea end of the model, this cable moved towards Waikiki as it were, mauka this list here about seven inches and the other about three inches, roughly, I did not measure them. **[720—638]**

Q. After observing the motion at that point by lifting the weight, what, if anything, was done to the weight and the cable?

A. Well, it was started and stopped several times, sometimes with the cars loaded and run around, sometimes with them partly unloaded and later again with all the cars ungripped.

Q. And each time was a mark made?

A. Not each time, but several times, two or three times.

Q. Did you observe any particular difference between the extent to which the marks separated at that point on these different occasions?

A. When there were loaded cars and loaded and empty cars attached to the cable this movement was a little different than when the cable was simply running with all the cars detached.

Q. About how far apart would you say that these marks separated?

(Testimony of George P. Dennison.)

A. When there were no cars attached to the cable they moved about five inches, each way, moving about five inches from the mark on the floor.

Q. A total length?

A. Of about ten inches separated the marks.

Q. Thereabouts? Did you make any observation at this point on the coal-conveyor system indicating the eight pulleys at the makai end of the track on the Ewa side? A. Yes.

Q. Describe exactly what was done.

A. On the makai with the train going to the right on this right-hand track, going from here.

Q. The Ewa side?

A. As the model lies, not as the plant lies.

Q. What did you observe at that point, Mr. Dennison?

A. Well, we watched the cars go around this place and watched the cable traveling around there without cars attached and watched the action of the cable when they were told to stop the plant and told to lift the weight, and then, lastly, I tried to lift—lifted **[721—639]** the cable up and replaced it there.

Q. Now, state what you observed at this point that I have just indicated, what you observed at that point when the cable was stopped and the weight was lifted?

A. When there were cars attached there was a slight slackening of the cable but not as much as when there were no cars attached.

Q. By saying that there were cars not attached to

the cable you mean to say that there were cars on the track?

A. The grips were open and the cars were at rest when the cable was moving.

Q. How long a length of time; was any great length of time required before you observed slack at this point after the order to lift the weight was given?

A. No, it seemed to—apparently you could tell when they began lifting the weight by the sort of slackening of the cable. The men were out of sight, of course.

Q. When the grips of the cars were unloosened how much slack was observed after the weight had been raised?

A. Well, the cable where I took hold of it, the cable would slack so, slack between the pulleys or the horizontal rollers would about touch the floor or almost touch it, apparently touching the floor.

Q. Now, describe exactly what you did, Mr. Dennison, with regard to the cable.

Question withdrawn.

Q. How long a time would you say, Mr. Dennison, elapsed from the time the order was given to lift the weight until you observed the slack at this point?

A. Why, I did not particularly notice, but it was a very short time.

Q. A minute or two minutes?

A. Why, I should think not over a minute, perhaps a little less, if anything, what would seem to be the time to hook a tackle on there and haul up.

(Testimony of George P. Dennison.)

[722—640] I did not particularly note the time, I don't know that it was the same each time.

Q. Now, describe what you did at this point, Mr. Dennison, indicating again the makai end of the conveyor on the Ewa side of the track.

A. I stood about here where I could get hold of the cable before it passed around this first roller.

Q. You mean the first roller of these eight pulleys?

A. Of these eight pulleys on the turn, this first vertical roller, I gripped the cable there with one hand and pulled it probably, getting a little slack, then threw it clear of these eight pulleys lying there. This floor is a little different from what this model shows. You have it that way and then you take two hands and place it back.

Q. With the exception of your hands what other appliances did you use in taking this cable off and replacing it after the cable had been lifted on the pulleys? A. Nothing.

Q. With what power did you take the cable off the eight pulleys?

A. Why, I don't know, it did not take any particularly great effort to get it off, I could lift it quite easily.

Q. What about putting the cable back into position?

A. I took both hands. I could possibly do it with one hand but I did not want to get that grease all over my clothes, you see, to do it. It was more convenient to throw it around this end.

(Testimony of George P. Dennison.)

A JUROR.—Did you stand in the very same position to do the second operation, Mr. Dennison?

A. Perhaps I moved a little, I don't exactly remember, perhaps I did. The cable was very greasy and I didn't care to get it all over my clothes.

Mr. SUTTON.—When you performed this experiment the cable was at rest?

A. The cable was at rest.

Q. And the weight had been lifted?

A. The weight had been lifted. **[723—641]**

Q. And the grips of the cars had been released?

A. The cable had been running around the course at that time before it was stopped without the cars.

Q. By that you mean that the grips were released from the cars?

A. Yes, the cars were all standing at the various points around and the cable was running. They gave the order to lift the weight, that was apparently done, and I moved it and put it back.

Q. You speak of these cars being all around, could you indicate roughly the condition of the cars as to being loaded or unloaded?

A. Why, I think all the cars were loaded when the experiments were first began, or nearly all, if not all, and were banked along on a side, then they were started at fifty or thirty-five feet apart and sent around the long track at the other end and some of them passed over at the street near the boat-house, part of the cars were carried there, I don't know how many.

Q. At the time you performed this experiment at

(Testimony of George P. Dennison.)

the makai end of the conveyor, can you state roughly what portion of the cars were around at that point?

A. No, I did not notice, there were some of them at various places.

Q. Do you recall whether or not there were any cars between the makai tower and the mauka tower on the Waikiki track? A. This track here?

Q. Yes.

A. Yes, there were some cars there but I don't recall whether they were loaded or empties.

Q. And do you remember whether there were any cars on the Ewa track?

A. Yes, I recall there was one car somewhere about in this position.

Q. Do you recall where any other cars were at that time?

A. No, not particularly, we were standing looking down in that direction. **[724—642]**

Q. Do you know whether or not the entire cars were running around the track at the time?

A. During the experiment?

Q. Yes.

A. I don't know, I did not count how many cars were there but all the cars were in motion at one time, there were no cars standing around here, they had been released way out at the other end so that we could see.

Q. It has been testified in this case that immediately prior to the accident to Mr. Ward the cable was in this position, indicating that the cable was off the first four of the series of eight pulleys at the

(Testimony of George P. Dennison.)

makai-Ewa side of the cable way and in this position on the next four pulleys of that series of eight, thus, indicating on the model the position. State whether or not in your opinion it would be possible for the cable to get in that position.

Objected to as absolutely incompetent and irrelevant and Mr. Dennison not having been shown to be an expert.

Question withdrawn.

Mr. SUTTON.—Mr. Dennison, among the various operations that you have been connected with have you had occasion to use cables, steel cables?

A. Yes, sir.

Q. Of approximately the size in question here, that is, three-quarters of an inch steel cables?

A. Yes, sir.

Q. Larger or smaller? A. Both.

Q. What was the nature of that experience?

A. In various ways at the railroad company, which at one time owned a coal-handling plant very similar to this one, years ago, and in connection with dredgers very extensively on various forms of dredgers.

Q. Did you have any connection with that coal plant of the O. R. & L. Company? A. Yes.

Q. What was that connection?

A. I superintended and I did a great deal of work personally in its operation.

Q. How many years experience would that be, Mr. Dennison. **[725—643]**

A. Well, the coal plant was in existence about

(Testimony of George P. Dennison.)

seven, eight or nine years, but it was used comparatively little.

Q. Now, Mr. Dennison, will you answer this question that I last asked and passed?

Mr. DOUTHITT.—The question is objected to, the witness has shown no qualifications.

Objection sustained. Exception.

Mr. SUTTON.—Mr. Dennison, state what if any contrivances or appliances there were in this coal-conveyor plant of the O. R. & L. Company with which you were connected in order to confine the cable in approximately the middle of the track around the curves? A. It had vertical pulleys.

Q. Calling your attention to Defendant's Exhibit 5, I will ask you whether or not the vertical pulleys to which you refer were similar or bore any resemblance to these?

A. They were vertical pulleys, they were very much smaller in diameter, perhaps not over half the diameter of this one you pointed to, and somewhat higher from the flange up. The general shape of the side of the pulley and flange was about the same as this one.

Q. And on the curves were the pulleys spaced approximately the same distance apart as these?

A. No, they were very much further apart.

Mr. SUTTON.—Now, we submit that the witness is shown to be familiar with plants of similar construction.

Mr. DOUTHITT.—That is objected to.

Objection sustained.

(Testimony of George P. Dennison.)

Mr. SUTTON.—Have you had any other experience with any other cable-ways, Mr. Dennison?

A. No, sir.

Q. Have you had any experience with cables in connection with dredging operations?

A. Not in connection with work of this nature.

Q. In connection with work of any kind?

A. Yes, where **[726—644]** the cable was pulled up by winding upon a drum.

Q. Have you had any experience in the bending or stiffness of cables, have you observed the possibility of bending cables?

A. Well, in operation they would naturally bend.

Q. In operation, have you had any experience used for the purpose of hauling material where the weight of the material hauled or articles hauled have been suspended from a cable?

A. Cable-ways.

Q. Have these cable-ways been operated by other cables, that is, for hauling back and forth, have these other cables used for hauling the weight so suspended been operated by mechanical means?

A. Yes.

Q. Went around drums or similar appliances in order that motion might be applied to the cable?

A. Yes.

Q. Have these cables that you referred to been around about sheaves or pulleys?

A. Over sheaves and blocks.

Q. Where has this experience of yours been?

A. It has been—my last experience of that kind

(Testimony of George P. Dennison.)

has been in the erection and construction of steel bridges for the Hilo railroad.

Q. On the Island of Hawaii, in this territory?

A. Yes.

Q. How wide were the places where the cables were suspended?

Objected to as immaterial.

Objection sustained. Exception.

Mr. STANLEY.—We offer to prove that the opinion of Mr. Dennison—

Mr. DOUTHITT.—The offer to prove, we submit, should not be made before the jury.

The COURT.—Gentlemen, you may retire in order that counsel may present his offer of proof.

Mr. SUTTON.—We offer to prove by Mr. Dennison, whom we have shown to be a man experienced in the use of cables of a similar nature, who has had experience with a coal-conveyor plant where the system employed was similar to that in operation at the **[727—645]** defendant's coal-conveyor plant upon which Mr. Ward was hurt, that in Mr. Dennison's opinion it would be impossible for a cable situated as the one in use at that time and similar to the one in use at the present time to assume the position testified to by one of the witnesses in this case, to wit: that at the extreme makai end of the conveyor on the Ewa side and on the series of eight pulleys at the commencement of that curve that the cable was out of its position on the first four pulleys, in fact, on the opposite side of those pulleys and in a position on the second four pulleys of that series of

(Testimony of George P. Dennison.)

eight, the cable between the fourth and fifth pulleys being down between the pulleys and either on the flange or near the top of the flange.

Order of proof denied. Exception.

(Order of Court made after jury returned to court.)

Cross-examination of GEORGE P. DENNISON.

Mr. DOUTHITT.—Mr. Dennison, are you a practical mechanic?

A. By that do you mean did I serve my time as a mechanic?

Q. Yes. A. No, sir.

Q. And you are not a mechanic, as I understand?

A. I don't know whether I could qualify as a mechanic and actually work with tools or not. Some tools I can use, some I cannot. I never served my time at any trade.

Q. Never served your time? A. No, sir.

Q. And the only time, as I understand you, that you were down here at this coal-conveyor was on the Saturday, last Saturday?

A. Yes, up around on the coal-conveyor.

Q. Upon the coal-conveyor?

A. Yes, sir, I do not remember ever being there before. I might have possibly been around there and walk over from the Marine Railway where we *used* [728—646] *have* dredgers, stop and watch the cars going back and forth but I never observed the plant at all. I have been on the wharf where I have had scows lying at the end of the wharf at various times, but I do not remember ever being up on

(Testimony of George P. Dennison.)

the plant before Saturday.

Q. Now, as you say, Mr. Dennison, that when the cable was stopped when the motor—it is an electric power, is it not, or was?

A. It is an electrical motor, or was, Saturday.

Q. When the motor was stopped you say that you observed a certain slackening up of the cable at the drum?

A. When they began to lift the weight just as it stopped.

Q. Just as it stopped?

A. In lifting the weight—

Q. How much—

Mr. STANLEY.—Let the witness finish.

A. When the weight was lifted the cable was slack, not when it just stopped.

Mr. DOUTHITT.—When the weight was lifted there was slackening at the drum, you say?

A. Yes.

Q. On the drum?

A. The turns around the drum released from it coming away from the drum.

Q. How much?

A. Hauling apart as shown by the chalk mark on the first turn on the cable an inch and a half.

Q. An inch and a half?

A. And as it went to the slack from the drum there was a little more than that, the turns did not each slack the same, it was slackening away.

Q. Now, you observed, did you not, the cable in operation at the drum? A. Yes, sir.

(Testimony of George P. Dennison.)

Q. The drum was turning in a mauka direction or turning towards the right, was it not?

A. Well, it depends on how you stand to look at it.

Q. Well, looking at the conveyor, which way was the drum running, right or left, as you looked at it?

A. We stood in [729—647] various places.

Q. Which way was it traveling, mauka or makai?

Mr. STANLEY.—The witness says it all depends which way you are looking at it.

Mr. DOUTHITT.—Which way was the drum running, Mr. Dennison, you understand whether it was running makai, the makai end of the coal-conveyor or whether it was running in the mauka way?

A. Standing on the water side of the wharf, the slip side of the wharf, facing towards the mountains, it was turning in this direction the fold going on the bottom of the drum.

Q. That is to say, it was running in a mauka direction?

A. The drum was turning in a mauka direction.

Q. And as the cable came down from the point, the sheave marked B? A. Yes.

Q. The drum going in that direction, the tension was on that particular portion of the cable leading down from the point B down to the drum, that is correct, is it not? A. Yes, sir.

Q. Now, you say that when the weight was lifted the cable slacked up on the drum an inch or an inch and a half, do you say?

A. About an inch or an inch and a half at the time it slacked.

(Testimony of George P. Dennison.)

Q. In all four cables, four turns?

A. This first one, the one in tension, slacked the least.

Q. Yes.

A. And going on over the last one where the weight was being released the strain was being removed would slack more.

Q. And all four of the turns did not slack up at that drum, did they?

A. All four of the turns slacked up, yes.

Q. How much?

A. An inch to an inch and a half, you see the mark was across the strand like that and they sort of go together, the first one traveling, and as it has to turn away from the one that lies there, that is the one that has the hauling [730—648] part on the top of the drum you make a mark across right on the outside here, you make a mark on the flange and as you release that weight these turns going together and this one, each one turning a little less than the one that has the most slack, the one that gives from each way will travel a little more here so that the thing will be in this direction if you have the weight lifted up. If you take your hand and ease it up there will be more, here, there is considerable slack there, you can ease it off.

Q. The slack then would be after it leaves the drum it goes down to point B on the model?

A. Yes, sir.

Q. To the drum? A. Yes, sir.

Q. After being wound around four times it goes

up to the sheave that holds up the weight?

A. Yes.

Q. Now, the slack would be in here?

A. Yes, inside.

Q. That is the slack that is taken in on the tension, you get that slack that is taken in from the tension?

A. No, I think it is entirely, well, practically all from the lifting of this, from the weight, after you lift the weight you can see it.

Q. After you lift the weight you can see it.

A. You can see it coming in, yes.

Q. And you say the slack at the drum was about an inch to an inch and a half?

A. Drawing away from the drum it released the drum, it released the drum so that the drum would turn freely.

Q. An inch and a half away from the drum?

A. Not an inch and a half, I say the movement of the turn on the drum would be that.

Q. The movement of the turn on the drum?

Mr. STANLEY.—The movement of the cable on the drum?

A. Yes, sir.

Mr. DOUTHITT.—But the movement of the cable on the drum?

A. Yes, sir. **[731—649]**

Q. Then all you got there was an inch and a half slack there?

A. If you overhaul it after lifting the weight you

(Testimony of George P. Dennison.)

would get more slack than that, by lifting it around with your hands.

Q. How much more slack would you get than that?

A. Three or four times more than that, it depends on how high you lift the weight. If you lift it away up, and overhaul it you get more than that.

Q. Then, as I understand, the cable was not sticking out from the drum, but it had simply moved in its position around the drum?

A. It sticks out a little bit in order to increase the diameter.

Q. How much?

A. Perhaps a quarter of an inch, something like that.

Q. Then when you got up here on the top of the coal-conveyor after seeing that you noticed the cable shifting its position?

A. After the thing started again, before we went up here the weight was still down and the machine started in operation again, then it was stopped.

Q. Just a minute, please, Mr. Dennison. After you had observed the position of the slack as you have testified, at the drum upon lifting the weight did you go on further to see what difference that made?

A. I think not at that time, the thing was lowered down and then we—

Q. When it was lowered down you went up on top. Then you lowered the weight after you went up on top. Now, what did you see?

(Testimony of George P. Dennison.)

Mr. STANLEY.—The witness testified that the engine was started up again.

Q. You lowered the weight first before you started the engine, did you? A. Yes, sir.

Q. Then you went up on top to see? A. Yes.

Q. Now, you have testified as to a difference of some five **[732—650]** inches, which cable was it that moved five inches?

A. Each of them moved five inches when there were no cars attached and the machine was stopped. With no cars attached, stopped the cable, lift the weight, having previously made a chalk-mark across the two strands and on the floor, then they each move about five inches, about four and a half to five inches.

Q. Moved about five inches in a direction from this sheave—

A. One moved one way five inches, the other moved the other way five inches.

Q. There was a belt here at the time and you saw it? A. A driving belt, yes.

Q. And you used that belt for the purpose of pulling it back?

A. I took hold of the pulley, just where the belt goes on the top of it and moved it in that way.

Q. Could it be moved back without a belt?

A. If the belt was taken off the pulley?

Q. Yes.

A. Quite as easily, we would not have the motor to move them.

Q. And you observed that this cable had shifted?

(Testimony of George P. Dennison.)

A. Yes, sir.

Q. One in one direction and the other in the other direction? A. Yes.

Q. These two?

A. Yes, sir. We had a chalk-mark on the two cables and on the floor, we marked it across like that, this cable.

Q. And when there were no cars attached and the motor stopped and weight lifted, this cable went ahead five inches and this one back five inches from the mark?

A. If there were loaded cars I tried it with loaded cars, this one came ahead seven inches and the other went back only three inches.

Q. When there were no cars on both cables on the Waikiki side of this model? A. Yes.

Q. One went ahead five inches?

A. Yes. **[733—651]**

Q. That is the Waikiki cable? A. Yes.

Q. And the Ewa cable on the Waikiki side went back five inches?

A. Yes. I did not measure it but that is as near as I can judge, five inches.

Q. It is the same thing?

A. Yes, as near as you can see.

Q. And when there were loaded cars the Waikiki cable on the Waikiki side went ahead seven inches?

A. Seven inches, yes.

Q. You are sure it is this cable?

A. This cable, the one on this side.

Q. That went ahead seven inches? A. Yes.

(Testimony of George P. Dennison.)

Q. And the other went back three inches?

A. Yes.

Q. Did you measure it? A. I did not, no.

Q. You did not measure it?

A. I did not have a rule, no.

Q. When you got up here, then, it was only a moving of seven inches and three inches at this particular point.

A. This represents the scale-house, it is right in where the scales are.

Q. There is where it moved right at that point?

A. Yes, sir.

Q. Now, when you lifted that cable up did you take it off the pulleys, the series of eight, on the Ewa side?

A. The cable was in that position (showing) was around on the eight pulleys.

Q. And you lifted it up?

A. Took hold of it about here, lifted it up and threw it or snapped it over.

Q. Snapped it over?

A. Until it was lying across there.

Q. Lying across where?

A. In that position (showing).

Q. There was a platform out there?

A. A platform out there.

Q. Lying on the platform?

A. I think it was the platform, I threw it across. Of course, this was slack there when it was thrown out one side. **[734—652]**

(Testimony of George P. Dennison.)

Q. Now, before you did that, Mr. Dennison, were those cars—had the cars been in motion?

A. How is that?

Q. Before you did that as you have just described, lifting the cable off the series of eight pulleys and putting it on the other side, on the Ewa side, had the cars been in motion?

A. The cable had been running with cars detached.

Q. Had been running with the cars detached?

A. Yes, sir.

Q. And stopped, had it?

A. Yes, stopped, and the order given for the weight to be lifted and it apparently had, because it slacked up.

Q. Then just prior to the time, as I understand you, that you attempted to lift the cable up and throw it over the other side by hand the cable had been in motion and no cars attached to it. And then when it was stopped, the engine was stopped, you went out there and attempted—and did put the cable over on the other side by hand?

A. Yes, sir, after the weight had been lifted.

Q. Did you try that same operation, Mr. Dennison, without lifting the weight? A. No, sir.

Q. Then you don't know, as a matter of fact, whether you would get that slack at that particular portion or not without lifting the weight? I am asking you, you don't know of your own knowledge, Mr. Dennison? A. What is that?

(Testimony of George P. Dennison.)

Q. You don't know, as a matter of fact, from your investigations there whether you could get the slack that is, of your own observation, whether you could get that slack if you did not lift the weight?

A. No, I did not try to lift it without. **[735—653]**

Redirect Examination of GEORGE P. DENNISON.

Mr. STANLEY.—You say, Mr. Dennison, that you did not measure this seven inches and three inches, was it measured in your presence?

A. Yes, sir.

Q. And did you state whether or not you observed those measurements?

A. I did not particularly observe them, I heard them called out.

Q. Did you see them being measured?

A. Yes, sir.

Q. Now, Mr. Dennison, you testified here that when you tried this operation of lifting the cable off the cars were detached? A. Yes, sir.

Q. At what time were they detached?

Objected to as not proper redirect examination.

Objection overruled. Exception.

Q. At what time were those cars detached, Mr. Dennison?

A. The cars were not detached just previous to that while the cable was running, they were detached before that.

Q. Detached before that?

A. Before that experiment was tried.

(Testimony of George P. Dennison.)

Q. Do you not remember this, Mr. Dennison, that during this experiment that the cable was running, the order was given to stop the engine, lift the weight and ungrip the cars?

Objected to as not proper redirect examination, leading and suggestive.

Objection sustained.

Mr. STANLEY.—You have stated, Mr. Dennison, that you did not release the—take the cable off the pulleys while the thing was in tension?

A. No, I did not try to.

Q. You did not try to? **[736—654]**

Mr. DOUTHITT.—We move to strike out the answer on the ground that it is immaterial and not proper redirect examination.

The COURT.—It is so ordered.

Mr. STANLEY.—I will ask you, Mr. Dennison, it was overlooked on direct examination, what was the condition of the cable as to being taut or slack when the cable was in operation with the cars running on the track? A. It was taut.

Mr. DOUTHITT.—Were the cars detached by means of the grip and the cable—the cable was taut, was it? A. Yes, sir.

Q. And when the grips were released from the cable, the cable was—there was a certain amount of slack in it, was there not?

A. There was very little, hardly perceptible, with the cars released, the slack would come with this raise, when the weight is lifted there is slack.

Q. Irrespective of the weight, don't you know

(Testimony of George P. Dennison.)

there is slack between each one—of these rollers, pulleys, dollies?

A. There is a certain little curve there, I don't know whether you would call it slack.

Q. There is sag? A. Yes, sag.

Q. There is sag between each one of these rollers when the engine was stopped whether you lifted the weight or whether you didn't?

A. There is sag, yes.

Q. A sag between each one of the rollers?

A. Yes, sir.

Q. All around the coal-conveyor?

A. I don't know all around, I only saw this end of it, but on this end between these horizontal rollers you can see it is not absolutely straight.

Q. It is just the condition of all wires where they are suspended?

A. Unless there is a very heavy tension so that you can in slack it is seldom that you can pull with it enough so that there is no sag.

Q. The condition of the cable that you saw there the other day, the wires were not sticking out all the way from a sixteenth **[737—655]** of an inch to one inch?

Objected to as not proper cross-examination.

Objection sustained.

Mr. DOUTHITT.—I ask the privilege, there is one question which I neglected to ask on cross-examination.

Q. On the cable on which these experiments were conducted last Saturday were not the wires sticking

(Testimony of George P. Dennison.)

out from one-sixteenth of an inch to an inch all the way up as far as you observed it?

Objected to.

Objection overruled. Exception.

Mr. DOUTHITT.—Your Honor allows me, in your Honor's discretion, to ask the question, the question having been omitted on cross-examination, although you had rested.

Mr. DOUTHITT.—Will you kindly answer the question?

A. There were no wires as far as I observed sticking out, the cable was in good condition.

[Testimony of J. M. Young, for Defendant (Recalled).]

Cross-examination of J. M. YOUNG, recalled.

Mr. DOUTHITT.—This is called the hauling cable, Mr. Young, is it not, the hauling cable leading down from point B?

A. Yes, sir, that part of the cable we call the hauling cable.

Q. And is wound around the drum four times and it is traveling as you look at it from the Ewa side, the drum is traveling in a mauka direction, is it not?

A. Well, it is traveling in a right-handed direction, if you look at it from the side.

Q. Well, it is traveling in a direction opposite to the [738—656] makai end of the coal-conveyor, in other words, it is traveling towards mauka, is it not, the drum?

A. Well, this cable would wind up in a mauka direction.

(Testimony of J. M. Young.)

Q. Is not the drum traveling in that way?

A. The drum is not traveling at all, it simply revolves.

Q. I mean revolving? A. Yes.

Q. It is revolving in a mauka direction?

A. Depending on which side you consider it, one side would be revolving in a mauka direction and the other side right opposite.

Q. I mean the drum itself about which the cable is wound, the drum is revolving toward mauka, is it not, in a mauka direction?

A. Well, if you consider the one side of the drum it is going mauka, if you consider the other side it is going makai.

Q. The top of the drum?

A. Yes, I believe the top would be moving mauka.

Q. Now, there is a slack or a sag in all cables, is there not, where they are suspended between different points as they were on this coal-conveyor?

A. Well, I would not want to make such a general statement as that, in general there is a sag, but not in all cases.

Q. Where wire rope or cables are lying between two points there is a sag between those two points, is there not?

A. Well, under certain conditions there is a sag, certain other conditions there would not be a sag.

Q. Lying between two points?

A. Yes, sir, if there is no tension on the cable it will assume the shape of a freely suspended chord and that curve is known as the ——— and it is

(Testimony of J. M. Young.)

perhaps the most familiar curve we have in mechanics.

Q. There is a sagging of the rope between the pulleys or wire rope, or any other kind of rope, is there not? A. In general. [739—657]

Q. Are you familiar with the work of Mr. William Kent, the Mechanic-Engineer's Pocket Book?

A. Fairly familiar with it, I know Mr. Kent, I have a couple of copies of his book.

Q. And you are also familiar with the fact that Mr. Kent in his work gives the sag of rope between pulleys?

A. I don't recall that fact, no, it is likely he does.

Q. The C. W. Hunt Company, is this a work on engineering or is it a catalogue? No, it is not work. I will ask you to look at this book, Mr. Young, and ask you if that is the work that I have just referred to, that you have just referred to. That is the work that you referred to, is it not?

A. Yes, sir, that is the work, Kent's Pocket Book.

Q. Now, on the driving side that would be on the Waikiki side of this conveyor, at all speeds of the cable, Mr. Young, where the pulleys are forty feet apart, the rollers or dollies, are forty feet apart, there is a sag of four inches, is there not, between rollers?

Objected to on the ground that it is not based on any evidence in this case, the evidence being that the rollers are between twenty and twenty-one feet.

Objection sustained.

Q. Do you know the sag between the dollies on that coal-conveyor? A. Under what conditions?

(Testimony of J. M. Young.)

Q. On the driving side when the power is on?

A. Yes, sir, there is a small sag there.

Q. What is it?

A. Oh, it is a fraction of an inch, probably.

Q. What is that?

A. Probably a fraction of an inch.

Q. How far apart are those pulleys?

A. They are about twenty feet.

Q. Twenty feet and you say it is a fraction of an inch, Mr. Young? A. The sag, yes. [740—658]

Q. On the driving side, the driving side as used in this work of Mr. Kent means when the cable is being operated and any tension is being exerted on the cable, is it not?

A. I think that is what Mr. Kent means, although that is a point that there might be some discussion on. I believe, however, that is what Mr. Kent means.

Q. Now, calling your attention to this fact, the distance between pulleys in feet is what Mr. Kent says is forty feet. Now, we will take one-half of that. You say it is twenty feet here?

A. I said it was about twenty.

Q. We will accept those figures as being approximately twenty feet. It means between rollers as it rolls along on the track?

A. I know what you refer to here, you are talking about the dollies.

Q. Between rollers or dollies. However, I am not sure that that is what Mr. Kent is talking about. I want you to look at that book?

(Testimony of J. M. Young.)

A. I started to read that and you took it away from me.

Q. I thought you had finished. You see there the distance the sag of the rope between pulleys, all speeds. You see that table? A. Yes, I see it.

Q. There is only one reference to it that is on page 924? A. Yes, I see that.

Q. Isn't there a sag between the pulleys on the driving side according to Mr. Kent when the distance between the pulleys or rollers is twenty feet, is there not a sag in the cable amounting to approximately two inches?

A. Well, I would like to say in this connection that the table and the context these notes do not apply to wire rope, that is manila rope, and that is gotten up by Mr. Kent to show the general data affecting the transmission of power by the use of manila rope around the pulleys and that is used in power transmission that [741—659] is the transmission of power from the primary station to the point where it is to be used and does not apply in the case of a hauling system such as this where wire ropes are used and the pulleys there are grooved pulleys where there are a number of grooves around the pulley in which the rope travels and that table there is an entirely different proposition and has no application in this case.

Q. Do you mean to say, Mr. Young, that the sag in the rope as contained in Mr. Kent has application to manila rope and not to steel cables?

A. I certainly do, yes.

(Testimony of J. M. Young.)

Q. Where will you find that for me, please?

A. The total of the notes.

Mr. STANLEY.—Just read it.

A. Yes, I will read it. I can also give you the person from which Mr. Kent took his notes. There is a discussion there on transmission of power by manila ropes.

Mr. DOUTHITT.—Is there any difference between a manila rope and a cable?

Mr. STANLEY.—Before going on the witness said he wanted to read it, and I should submit he should be allowed to read it.

A. There is quite a little discussion here that occupies about four pages of small type in Kent's pocket book and it has general data that is put in here for the purpose of assisting engineers in the general problems of design and if you wish me to read it, I can do it. There are about as I say four pages of it. However, I will start off. Rope driving.

Mr. STANLEY.—What is that?

A. (Reading.) Rope Driving, the transmission of power by cotton or manila rope. "The transmission of power by cotton or manila ropes is a competitor with gearing and leather belting when the amount of power is large, or the distance between the power and the work is comparatively great. The following is [742—660] condensed from a paper by C. W. Hunt, Trans. A. S. M. E., xii, 230:

But few accurate data are available, on account of the long period required in each experiment, a

(Testimony of J. M. Young.)

rope lasting from three to six years. Installations which have been successful, as well as those in which the wear of the rope was destructive, indicate that 200 lbs. on a rope one inch in diameter is a safe and economical working strain. When the strain is materially increased the wear is rapid."

Then he gives a number of formulae here which affect those matters which I will omit.

"This makes the normal working strain equal to 1/36 of the breaking strength, and about 1/25 of the strength at the splice. The actual strains are ordinarily much greater, owing to the vibrations in running, as well as from imperfectly adjusted tension mechanism.

"For this investigation we assume that the strain on the driving side of a rope is equal to 200 lbs. on a rope one inch in diameter, and an equivalent strain for other sizes, and that the rope is in motion at various velocities of from 10 to 140 ft. per second.

"The centrifugal force of the rope in running over the pulley will reduce the amount of force available for the transmission of powers. The centrifugal force $F = Pv^2 \div g$.

"At a speed of about 80 ft. per second, the centrifugal force increases faster than the power from increased velocity of the rope. Computing this force at various speeds and then substracting it from the assumed maximum tension, we have the force available for the transmission of power. The whole of this force cannot be used, because a certain amount of tension on the slack side of the rope is needed

(Testimony of J. M. Young.)
to give adhesion to the pulley. What tension should be given to the rope for this purpose is uncertain, as there are no experiments which give accurate data. It [743—661] is known from considerable experience that when the rope runs in a groove whose sides are inclined toward each other at an angle of 45° there is sufficient adhesion when the ratio of the tensions T –:– t=2.

"For the present purpose, T can be divided into three parts: 1. Tension doing useful work; 2. Tension from centrifugal force; 3. Tension to balance the strain for adhesion.

"The tension t can be divided into two parts: 1. Tension for adhesion; 2. Tension from centrifugal force.

"It is evident, however,—"

Mr. DOUTHITT.—This is all very nice, Mr. Young, but I don't see what we are standing here listening to all this for. I am simply asking you a question as to sag on a steel cable the rollers of which are twenty feet apart?

Mr. STANLEY.—And Mr. Young's statement was that the table from which Dr. Douthitt purported to read had nothing whatever to do with steel cables.

Mr. DOUTHITT.—I am simply asking you if that does not apply, you say it does not apply to steel cables?

A. Yes.

Q. Well, I am asking you, Mr. Young?

A. Yes.

Q. You say that it does not apply?

(Testimony of J. M. Young.)

A. I certainly do, it is down here in black and white.

Q. Now, what is the sag in the steel cable where there is a distance of twenty feet between pulleys or rollers?

Objected to as asked and answered as being a fraction of an inch.

Mr. DOUTHITT.—What fraction of an inch, that is very indefinite.

A. No, I don't think so.

Q. What do you mean, is it one eighth of an inch, or a quarter of an inch?

A. I mean exactly what I said, a fraction of an inch.

Q. One eighth of an inch is a fraction of an inch?

A. It [744—662] is one of them.

Q. A quarter of an inch is a fraction of an inch?

A. Another one.

Q. Five eighths of an inch is a fraction of an inch.

A. Well, in saying a fraction of an inch I wish to convey to your mind that the sag would not be over an inch.

Q. Then it may be three quarters of an inch between pulleys? A. It might be, yes.

Q. That is between each pulley around the entire coal-conveyor of twenty-eight hundred feet?

A. You are talking about sag now, are you not?

Q. Sag, that is correct.

A. A fraction of an inch.

Q. And it might be three quarters of an inch?

A. Well, you understand that in a system of this

(Testimony of J. M. Young.)

kind there is considerable flexibility in the arrangements made for taking up that that the slack in the cable, the sag varies very considerable even when it is in motion, when it is in operation, it must be in order to avoid the destructive effects.

Q. That is true.

A. Therefore, this sag must vary with the stress, with the stresses, and it is perfectly reasonable to suppose that under certain conditions of operation sag would be very little and under certain other conditions which do not vary very much from the first assumed it will vary very much more. It will be also influenced somewhat at the point at which you make the observation. For instance, if you grip a car sudddenly just behind the car there will be, of course, more sag than just in front of it and so on. There are many conditions there. It is a question I rather hesitate to pin myself down on under oath. I think you are asking me too much; I don't think anybody could.

Q. I don't know. I know I could not do it?

A. I don't [745—663] care to make any definite statement, five eighths of an inch or nineteen thirty seconds, or anything like that. I said it was a fraction of an inch, that would convey to your mind something greater if I said something greater, but I wish to get into your head that it was something less than an inch.

Q. Something less than an inch? A. Yes, sir.

Q. Probably? A. Yes, sir.

Q. And that something less than an inch was dis-

(Testimony of J. M. Young.)

tributed over that entire twenty-eight hundred feet of coal-conveyor?

A. I did not say that at all, we confined our statement to the distance between two pulleys. I didn't say anything about twenty-eight hundred feet.

Q. I know you didn't, but you understand that the pulleys are at a distance of twenty feet from one another all the way around this coal-conveyor, are they not? A. Yes, sir.

Q. And wherever those twenty feet appear, the distance between pulleys of twenty feet appear, you would expect us to understand your testimony that you would find a sag of three quarters or less than an inch or a fraction of an inch?

Objected to.

Mr. DOUTHITT.—I will reframe the question.

Q. In the event that you had no cars at all on it moving, the cable is at rest, you will find a sag between each one of these pulleys wherever the dollies are situated in the tracks around the coal-conveyor, will you not?

A. Well, I will say that the cable could not be at rest and moving at the same time.

Q. That is true but when the cable is at rest you will find a sag between these rollers or dollies wherever the dollies are constructed around the coal-conveyor? A. Yes, sir.

Q. Is not that a fact?

A. There is a small sag there. [746—664]

Q. And that sag you will see between each one of them, would be a fraction of an inch or less than an

inch? A. Yes, sir.

Q. Between each one, between each two?

A. Between every two dollies.

Q. Now, you say there was a fifteen hundred pound tension on the cable? A. I did not.

Q. What did you say about that?

A. You asked me how much tension would probably be in that cable, I said in my opinion the tension would be between a thousand and fifteen hundred pounds.

Q. Would that be under all conditions?

A. No, it is varying constantly.

Q. It varies according to what?

A. It varies according to the diameter for one thing, it varies according to the number of loaded cars that are being pulled, the number of empty cars, the number of cars that are being gripped and ungripped, of course that affects it. It varies with the condition of the cable somewhat, it varies with the voltage of the electric system which is driving it or pressure of steam which is driving the engine, it varies with the actual amount of weight in the box, it varies with the lubrication of the sheaves, the vertical pulleys around which the cable moves and the lay on the drum, there are other factors, those are some of them.

Q. The resistance of the air?

A. No, I would consider that negligible.

Q. You would consider that negligible?

A. Yes.

Q. You spoke of the temperature?

(Testimony of J. M. Young.)

A. Temperature, yes, that affects it because it is a well known fact that steel or any porous metal will respond on being heated and if we change the temperature say ten degrees there is a corresponding amount of change in length of the cable and in ordinary design work, we consider that under the range of temperature ordinarily employed in designing there is about one inch for every one hundred and [747—665] thirty feet of length. That of course makes clear the provision which Mr. Kent has made for a large amount of take-up, he has the pulleys that move up and down on the cable situated that the cable can move itself up or down and neutralize and take up this slack, much of which is due to temperature.

Q. Now, it is a natural mechanical fact, is it not, Mr. Young, that when you have a sag on any portion of a given rope, whether it be wire rope or whether it be manila rope, the slack if you will have any will naturally go to that sag?

Objected to as unintelligible.

Mr. DOUTHITT.—For example, if you have a sag at this portion, I mean by a sag a rope in this condition that I am describing, if there is any sag in the cable at all it will naturally run to the cable at that point; it is a mechanical fact, is it not?

A. You did not state that right, Mr. Douthitt. I will say this, that a sag in the cable is accompanied by a certain slackness.

Q. That is true?

A. I won't say that any other slack or sag might

move there and take its position there. You see the two are very closely associated, in fact it is the slack which produces the sag, not the sag which produces the slack.

Q. If you have a sag in your cable and it is in the position I have described, now, if there is any slack elsewhere around that cable it will naturally run to that point, will it not?

A. I don't see why it should, because the sag at that point would already have its slack.

Q. But there would be more slack, there would be a tendency—you take a piece of string and draw it across the table and stop it like that the rest of the string would naturally go to the center, wouldn't it?

A. I don't see why it should.

Q. Is not that a fact?

A. It most certainly is not a [748—666] fact.

Q. If you have to send a cable along like that wouldn't the slack in the rest of the cable if it were traveling along naturally gravitate to that spot?

A. The natural thing to happen in a case of that kind would be for the cable to stop, I should say.

Q. But supposing it were going and you stopped the cable if the cable were moving at the time it came off and was in that position as I have just described and you stopped your engine, where would your slack go to around that coal-conveyor, wouldn't it go to that point?

A. No, I don't think it would, I think it would disappear due to the force of gravity which produced the slack, the force of gravity principally, and that

(Testimony of J. M. Young.)

will act more directly and more effectively on those operations of the cable and the effect of gravity would be to produce a small slack in each spot around between the pulleys and I believe that most of the slack would disappear in that way. I don't think that any of the slack would automatically and inherently pick itself up and lay itself around that bend; I cannot conceive of that, that would be rather surprising if that should happen.

Q. Wouldn't the slack be forced around to that—if you were running the cable, the cable were in operation, it came along at that point and your cars were attached, we will say the cars were attached and the cable certainly stopped, is it not a mechanical fact that the slack would run to that point?

A. Well, you impose another condition. You have now brought up the matter of the cars being attached to the cable. The fact that a car was attached to the cable would probably produce a certain amount of the slackness, just in front, but that would be immediately assimilated and taken up and absorbed by that moving weight which goes up and down.

Q. On this side of the coal-conveyor?

A. On either side.

Q. Do you mean to say that that weight moving up and down [**749—667**] could take up the entire weight of this cable and all the cars attached, all the cars weighing three tons at least?

A. I did not say that all.

Q. Could it take it up and down?

A. It does as a matter of fact, yes.

(Testimony of J. M. Young.)

Q. Takes in the slack there under those conditions when you stop it? When you stop your engine suddenly and if you have the cable off in that way wouldn't it naturally throw the mechanism of those cars which were thrown out as we were stopping would it throw the slack right around to that point?

Objected to as indefinite.

A. I don't mind answering the question.

Objection withdrawn.

A. I have answered it already several times, but I don't object to doing it again. The slack is taken up by this moving weight, this weight which is capable of moving up and down. The magnitude of the weight is so proportioned, so adjusted that it is capable of taking up this slack. Now, if the slack occurs we know that the slack is taken up. It is properly a question of observing the motion of the machine. We know the fact that it does. If you have seen the machine you know it to be a fact.

Q. Know what to be a fact?

A. That the slack is taken up.

Q. Takes up the slack at this particular portion of the coal-conveyor?

A. Why, Mr. Douthitt, that weight takes up the slack on the entire distance, it would be a foolish thing to take up the slack at that particular point, it takes all the slack up.

Q. It takes the slack as it takes it from the drum?

A. It pulls it in.

Q. Of course, it does just the same as you would have to do to pull it in by hand, if you didn't have it

(Testimony of J. M. Young.)

there, but I [750—668] mean this, Mr. Young, I mean this, if you had loaded cars, twenty cars for example, five or six on the way towards the coal-yard, on the Waikiki side, some six cars between the makai tower and mauka tower on the Ewa track which were not attached to the cable and four cars loaded at these towers and the cable had come off the pulleys at the makai end and the engine was certainly stopped there would the slack of the cable caused by the momentum of the cars which would naturally have a tendency of running around the mauka end to that makai end, wouldn't it?

A. It would if the weight had dropped down and touched the ground and was being supported so that the weight was no more effective. I don't think that the change of the weight would be sufficient for that to happen. This adjustible weight is a weight placed on the cable for the purpose of adjusting the tension and is capable of taking up several feet of slack and the slack which would be produced at that end, the mauka end, under the conditions which you have just named.

Q. Makai end?

A. Yes, would be less than the slack which the weight is capable of absorbing.

Q. Yes, but it would produce slack there under the conditions, wouldn't it, the momentum of the cars does that. The momentum of those cars being stopped suddenly, loaded cars on their way towards the coal-yard under the circumstances and conditions would produce—would take the slack to that end of

(Testimony of J. M. Young.)

it? A. If you will permit me to—

Objected to as having been asked and answered several times.

Objection overruled.

The COURT.—I don't think it has been answered with reference to loaded cars which counsel asks about.

Mr. DOUTHITT.—Please answer the question.

A. Please state it again.

(Last question read.) [751—669]

Q. The engine being stopped, the cable being stopped, the engine stopping of course the cable was stopped, suddenly under steam power?

A. If that were possible.

Q. How is that?

A. I say if that were possible.

Q. What is that?

A. Stopping suddenly.

Q. Stopping it as suddenly as it may be stopped by the use of steam?

A. Well, under those conditions, under the conditions which you have just named stopping the engine is accomplished by shutting off the steam, it has a certain amount of inertia. In other words the drum of the engine continues to revolve under its own inertia when it has any momentum. The cars continue to move also under their own momentum and of the moving parts and if you shut the steam off all the parts will move, moving in unison in about the same general relation that they were moving before you shut the power off and I do not believe that

(Testimony of J. M. Young.)

the preponderance of motion of the cars over the other parts would produce slack there to any extent that the weight would not absorb. Is that clear to you?

Q. Yes. Why the weight, Mr. Young, only absorbs the slack as it comes going in a mauka direction, does it not?

Objected to as already asked and answered.

Objection sustained.

Mr. DOUTHITT.—Mr. Young says it absorbs from all around there.

The WITNESS.—I would like to bring out another point if I may, Judge.

The COURT.—Proceed.

A. A number of insinuations have been made here frequently trying to bring in matters that are rather humiliating and I would like to correct that if I may.

Mr. DOUTHITT.—Let the jury hear what you say.

A. And I would like to say that a number of suggestions have [752—670] been made by Mr. Douthitt and I would like to correct those if I may. On my last appearance here, which I believe was Friday, if I am not mistaken, I think it was Friday, Mr. Douthitt got up a question of an excerpt from a catalogue which purported to be a Hunt catalogue and he read from the catalogue, I believe, and referred to it and I should like to see that.

Q. About the what?

A. About the life of a cable. A statement was made that a cable had a life of five months and for

(Testimony of J. M. Young.)
one hundred and fifty thousand tons.

Q. You would like to see that? A. Yes, sir.

Q. We can show it to you right here. Each cable handles about one hundred and fifty thousand tons of material and lasts about five months?

A. If I may. This is a page from the Hunt catalogue which is made up of a number of little bulletins. This particular one applies to Hunt's cable railways and on one page is Hunt's steam engine cable, a good record continuous run of five months without closing the tackles.

" 'Hunt' Steam Engine Cable Driver at the Roane Iron Company's Blast Furnaces, Rockwood, Tennessee.

"A cable railway is used to bring stock from the yard to the skips of the furnaces. Mr. Stuckey, the constructor of the furnaces, recently made the following statement as to the merits of this engine:

"'It is decidedly the best engine for heavy constant work I have ever seen in my 35 years of experience as a blast furnace constructor. This engine has been in constant operation from August 1, 1901, to the present time, night, day and Sunday, the only exception being shut downs of about two hours to apply new cables to the railway. During all this time no repairs of any kind whatsoever have been made to the engine and no adjustment of any kind has been made, other than to take up one-half turn on the metallic packing.'—November 10, 1903." [753—671]

Then down below it says:

(Testimony of J. M. Young.)

"Each cable handles about 150,000 tons of material and lasts about five months."

Now, the point I would like to call to your attention is this, that in my testimony I made the statement that the conditions under which this cable was operated that it ought to have an economical life of approximately eighteen months, perhaps I said from fifteen to eighteen months, and Mr. Douthitt read this to show that this cable would only last five months, five months and would carry one hundred and fifty thousand tons, whereas I have stated one hundred and twenty-five. I think that is misleading because Mr. Douthitt did not bring out the other fact in connection with it, namely, that this cable operated night and day continuously for five months. Now, five months' continuous operation means about thirty-six hundred hours. Now, thirty-six hundred hours under the conditions under which the cable operates on this plant, the Inter-Island plant, will mean about thirty months of operation of the cable. In other words it means a period of operation considerably greater than I stated the economical life of the cable would be and I object to being reported in that way. I don't think it is a credit, it is not ethical.

Q. We are very glad to hear that explanation, Mr. Young, but I am not attempting to do anything but what is exactly within the legitimate lines of cross-examination.

A. That is not legitimate, it is not true.

(Testimony of J. M. Young.)

Q. You asked for the statement and I gave it to you.

Mr. STANLEY.—Mr. Douthitt asked this witness if he was familiar with Hunt's works. There is no such work as Hunt's work, it is a collection of catalogues.

The COURT.—An opportunity ought to be given to the witness to examine the publication from which counsel examines him. [754—672]

A. The point on which I wished to assure myself was this, whether or not the catalogue that Mr. Douthitt was using was the same as the catalogue which I have in my office was and I referred to that catalogue on return to my office to see the statement which I thought was the one referred to and I just wanted to be sure that it was, and it is the same catalogue, the same statement, and it is for continuous operation, which would mean about thirty months here, considerably in excess of what I should consider the economical life of the cable. In other words that eliminates that entirely of value.

Mr. DOUTHITT.—How much would a steel cable, a three-quarter inch, nineteen wire, six strand cable stretched in the course of a year of use such as it was subjected to in this case?

A. Well, that would depend on a number of factors. It would depend first of all upon the kind of material of which the cable was made. It would depend on whether or not it was a standard cable, or whether it was a Lang laid cable, it would depend on the size of the drums and pulleys, whether it has been

(Testimony of J. M. Young.)

in continuous operation, whether or not it has been well lubricated, whether or not it has been allowed to rust, that being one of the factors which will influence it very materially, and a number of other factors. I will say though that the stretch in that cable in my opinion would be, oh, several feet, a number of feet.

Q. Could you give us anything about the stretch of the cable per foot?

A. Well, it would be somewhat less than the elastic limit of the material, it would be a fraction of an inch.

Q. Do you think it would be as much as a quarter of an inch per foot?

A. I doubt very much if it would.

Q. Well, how about one-sixteenth per foot or one-eighth of an inch per foot?

A. It might be as much as one-eighth.

Q. One-eighth of an inch per foot?

A. It might be, I hardly think so, but it might be.

Q. Now, you stated, Mr. Young, a few moments ago that you [755—673] thought it would be several feet. Now give us approximately what you mean by that?

A. Well, allow me to make a little explanation. When a new cable is placed on a cable-way it is spliced together, the two ends are spliced and the weight at that time is near its upper limit of movement, that is in the upper portion of its limit of movement and as the cable wears and stretches why the weight gradually drops lower and lower. Now,

the range of movement is provided for this weight is perhaps five or six feet, perhaps more than that, and the cable if left on long enough will eventually stretch out so as to take up all that length of movement just by weight. It is not a thing that can be expressed in any exact measurement because it is a thing which occurs every day more and more progressing.

Q. The only way that you could tell that, Mr. Young, is by actual experience with the cable where you are working you could tell the stretch of the cable, there is a set table by which you could judge that, is there not?

A. There may be, I don't know, I have never seen one. I don't recall and I don't know. It is likely though that a table has been made, I don't recall any.

Q. Would you think that in a cable twenty-eight hundred feet long used for eight months and subjected to the same amount of work that this cable was subjected to might stretch we will say about fifteen feet?

A. Well, I should hardly expect it to stretch that much although it might. I hardly think it would be that much. [**756—674**]

Redirect Examination of J. M. YOUNG.

Mr. STANLEY.—Do you know anything about how much it would stretch in eight months?

A. Beg pardon?

Q. Can you approximate how much it would stretch in eight months subjected to the use to which it was put in this case by the Inter-Island Navigation Company on the coal-conveyor?

(Testimony of J. M. Young.)

A. I would not want to make a definite statement upon that point because I have not any exact data upon which to go. I don't know of any. I have never seen any. I believe that I have covered it when I say that it would stretch several feet. I don't believe it would go as high as fifteen feet, I think it would be considerably less than that.

Mr. DOUTHITT.—Although it might?

A. Yes, the cable might have got heated up sometime and stretched.

Mr. STANLEY.—It might have been heated and stretched, there is a good many conditions?

A. It may have been caught in some way or other by a Stillson wrench or monkey wrench and at that time a strain put on with the engine and in such case it would naturally stretch, some steel cables do stretch, there is no doubt about that but they do not stretch as much as a rope, a manila rope, but they stretch a certain amount.

A JUROR.—Mr. Young, would that several feet of stretch which you have just testified to or made a statement about wouldn't that stretch be taken up and adjusted by the weight?

A. Immediately, immediately. That is why the stretch has no bearing on this case because it is immediately absorbed by the weight and taken up.

Mr. DOUTHITT.—While in motion, Mr. Young, of course the [757—675] weight would take it up.

Mr. STANLEY.—It will take it up whether in motion or not as soon as the weight is suspended on it.

(Testimony of J. M. Young.)

A JUROR.—How could it do that, can you explain it, when it is not moving it takes up the slack and when it is moving it does the same thing?

A. I think I can.

Q. I would like to know?

A. This weight here is in a bight of the cable, in fact the weight is being supported by the cable and the weight in the process of being supported indices a certain strain or stress in the cable and that stress is transmitted along the cable in the direction of its length by virtue of the wires being continuous and it is a well known mechanical fact that when a chord, a flexible chord, or even a rigid member is stretched in one part and is not restrained by a clamp that the stress will travel along in the direction of its length, therefore it is obvious that if a cable is stretched along here the stress will be present in all portions of the cable.

Q. That is when it is moving?

A. When it is moving or when it is quiet. Another point that might be brought out there that this drum on which the cable is wound winds on one side of the drum and is forced over to the other side in the process of winding and unwinding it is a spindle, in other words, the cable is wound on one end and is unwound on the other and it is obvious that there will be a space produced on one side and piling up in the other at the end of the spindle and in order therefore for the cable to remain on the drum it must slip over, it constantly slips over on the drum in every revolution of the drum that cable slips over

(Testimony of J. M. Young.)

three-quarters of an inch. Well, now a stress is being transmitted to the cable from the drum and at the same time there is a movement by translation in the direction of the axis of the drum, there is a friction motion, it is the result of two movements, the cable not only slips over but it [758—676] slips ahead a little bit on account of the stress and that very slipping will more than account for these small variations of slack which you have just been referring to. Is that clear to you?

Mr. DOUTHITT.—Slipping ahead?

A. It will slip on the drum.

A JUROR.—Slipping ahead or backwards?

A. It may be one way or the other depending upon the number of factors.

Mr. STANLEY.—One of the jurors asked a question, that is the height of the top of the roller above the ties.

Mr. DOUTHITT.—Two and a half inches.

Mr. STANLEY.—That is admitted.

Mr. DOUTHITT.—Yes.

Mr. STANLEY.—It is admitted that the top of the roller or dolly is two and a half inches above the planking between the tracks.

A JUROR.—Mr. Young, there is one thing I would like to ask that I don't seem to understand. When this cable on this side for instance, supposing that this was caught and jammed, the engine was stopped and this obstruction was taken away and the engine was stopped, do you mean that this box would pull the slack around?

(Testimony of J. M. Young.)

A. Do you mean if rigidly held there as by a vise?

Q. By a vise? A. A grip like a vise?

Q. The engine was stopped and then the vise taken off, would this box take up all of the slack?

A. Do you mean if you released the grip, the vise there?

Q. Yes.

A. If you released that it immediately would take it up.

Q. After the engine had been stopped? A. Yes.

Q. Left lying on there it will pull it around?

A. Yes.

Q. Mr. Young, will it pull it back this way or will it slip [759—677] on the drum?

A. It would pull in both directions and therefore some slipping on the drum and the sum total of all motions will be equal to the slack taken up. It will slip in both directions and equalize. That is one of the features of a drum of that kind, that is the point on which the excellence of this system depends. You understand that this Hunt system is a most admirable system. It is a remarkable combination of working movement. As a matter of fact Mr. Hunt is one of the men to receive the Corson medal, which is one of the highest acknowledgments that a man can receive from a scientific society in America and that medal was awarded on account of this design. It is a most remarkable combination of mechanical movements and that is the chief feature of it that these stresses and movements are so distributed as to avoid excessive wear and any

(Testimony of J. M. Young.)

trouble to the apparatus. There is no question at all about the weight taking the slack up. Some of the slack will be received around the drum in the way of the movement of the cable on the drum. Other portions of it will come from either end that can be ascertained definitely by seeing it in operation. It is a positive fact and one that can be verified by anybody who looks at it in operation.

Mr. STANLEY.—As I understand, Mr. Young, you verified it by going down to the drum on several occasions and marking the strands, the turns of the cable around the drum horizontally and also marking the side of the drum itself?

Objected to as improper redirect examination.

Objection sustained.

Q. How, Mr. Young, would you proceed to demonstrate that?

Objected to as incompetent, irrelevant and immaterial, and having been gone into on direct examination. A. In order—

The COURT.—You do not refer to this particular conveyor, **[760—678]** but any conveyor of the Hunt design?

Mr. STANLEY.—I am asking the general demonstration.

Objected to as not redirect examination.

Objection sustained. **[761—679]**

[Testimony of Charles Merseberg, for Plaintiff (in Rebuttal).]

Direct examination of CHARLES MERSEBERG, recalled for the plaintiff in rebuttal.

Mr. DOUTHITT.—Mr. Merseberg, you were a witness for the plaintiff in this case in chief?

A. Yes.

Q. While you were employed on the coal-conveyor of the Inter-Island Steam Navigation Company, the defendant in this case, prior to Mr. Ward's injury I will ask you whether or not Mr. Gedge, the Secretary and Treasurer of that company, ever gave you or the men on the coal-conveyor any orders in regard to the work, with regard to the conduct of the work on the coal-conveyor?

Objected to as improper rebuttal.

Objection sustained. Exception.

Mr. DOUTHITT.—Mr. Merseberg, at the time of George Ward's accident, the plaintiff in this case, I will ask you whether you heard Nunu tell anything to Ward? A. No.

Q. I will ask you whether there was anything to prevent—or specifically I will ask you this question: it has been testified here by Nunu in this case for the defense that Nunu told George Ward at the time that the cable was being replaced on the day of his accident to lift the weight; I will ask you whether or not Nunu ever made that statement to Ward?

A. I never heard him make such a statement. He did not say so.

Q. And you were present—I mean at the time of

(Testimony of Charles Merseberg.)

the attempt to put the cable back or at any time that day?

A. I never heard him make such a statement.

Q. And were you present there at the time when the attempt was made to replace the cable?

A. Yes, I was close up to them. George, Nunu and myself very near each other. **[763—681]**

Q. And were you in a position to hear any conversation that took place between Nunu and Ward on that occasion?

A. I was quite close up to him and I would have heard every word.

Cross-examination of CHARLES MERSEBERG.

Mr. STANLEY.—Did you hear any talk down there? A. About what?

Q. Did you hear any talk about anything at the time that Ward or you people down there were attempting to put the cable back? A. No.

Q. You did not hear a word said by anybody down there at the time you put the cable back? A. No.

Q. You did not hear a word said by anybody down there at the time that cable was put back or they were attempting to put the cable back?

A. We were not talking, we were working, we wanted to get the cable back.

Q. Yes, but from the time that Ward got down there until his accident you heard no talk at all?

A. Well, before we attempted to replace the cable he told us to go and get the crowbars.

Q. Yes, after he told you to go and get the crowbars you did not hear a single word spoken?

(Testimony of Alice Ward.)

A. No, we did not do any talking, we went to work. **[764—682]**

[Testimony of Alice Ward, for Plaintiff (in Rebuttal).]

Direct Examination of MISS ALICE WARD, called for the plaintiff in rebuttal, sworn.

Mr. DOUTHITT.—What is your name, Miss Ward?

A. Miss Alice Ward.

Q. And where do you live?

A. I live 803 Kinau Street.

Q. And how long have you lived there?

A. Two years.

Q. Is Mr. George Ward any relation to you?

A. Yes, he is my uncle.

Q. And were you living there after your uncle, Mr. Ward, was hurt at the Inter-Island Steam Navigation Company? A. Yes, I lived there.

Q. Do you know Mr. Norman E. Gedge?

A. Yes, sir.

Q. And did you know him at the time?

A. Yes, sir.

Q. That Mr. Ward was hurt? A. Yes, sir.

Q. Do you remember—did you ever see Mr. Gedge at Mr. Ward's residence at 803 Kinau Street?

A. Yes, sir.

Q. About how long after Mr. Ward was out of the hospital was that?

A. The second Sunday after Mr. Ward, my uncle George, was home from the hospital, Mr. Gedge called on him.

(Testimony of Alice Ward.)

Q. And did you hear any conversation between Mr. Gedge and Mr. Ward? A. Yes, sir.

Q. Would you please tell the jury what that conversation was?

Mr. STANLEY.—We object to it on the ground that it is not rebuttal and on the further ground that no ground was laid on the examination of Mr. Gedge for the impeachment.

Mr. DOUTHITT.—I asked Mr. Gedge on the stand if he didn't have a conversation with Mr. Ward at George Ward's house on Kinau Street after he got out of the hospital and whether he didn't **[765—683]** complain to Ward that Mr. Kennedy had relieved him of his work down there as general superintendent of the coal conveyor. He said nothing of the kind ever took place.

Mr. STANLEY.—We do not deny that.

The COURT.—His attention was not called to the presence of any third person.

Objection sustained. Exception.

No cross-examination.

The further hearing of this case was continued until to-morrow morning at 8:30 o'clock. **[766—684]**

In the Circuit Court of the First Judicial Circuit, Territory of Hawaii.

January Term, 1914.

GEORGE E. WARD,

Plaintiff,

vs.

INTER-ISLAND STEAM NAVIGATION COMPANY,

Defendant.

June 17th, 1914.

Mr. DOUTHITT.—Will counsel admit that the cable, machinery, motor and appliances now in use on the coal-conveyor were the same at the time of the experiments which were made by Mr. Young and Mr. Dennison?

Mr. STANLEY.—No, sir. We will admit that the last experiment—that the motor and appliances at the time of the experiments made by Mr. Dennison were the same as they are to-day. We will admit that the last experiments made by Mr. Young, that at the time of the last experiments made by Mr. Young, that the motor and appliances are the same as they are to-day. Mr. Young was down there a year ago when the appliances were different.

The COURT.—Mr. Young made two experiments.

Mr. DOUTHITT.—I mean the last experiments that were made by Mr. Young and Mr. Dennison, as testified to here in this case.

Mr. STANLEY.—We will admit that the motor and appliances were the same as they are to-day

(Testimony of Alice Ward.)

during the experiments conducted within the last few weeks, conducted by Mr. Young, it being distinctly understood that the experiments were made by Mr. Young when the appliances were different, when there was steam power and when there was a cable practically the same as the cable in operation [767—685] at the time that Mr. Ward was hurt.

Mr. COKE.—You admit that when the experiments were made by Mr. Young or Mr. Dennison within the last two weeks, that on those occasions the cable and appliances and machinery were the same as they are now?

Mr. STANLEY.—I am not sure that I can. We admit that the recent experiments, at the time of the recent experiments made by Mr. Young and Mr. Dennison we admit that the appliances were driven by electricity, at that time and generally the conveyor was in the same condition. My impression is that very, very recently a new cable has been put in.

Mr. STANLEY.—Mr. Sheedy informs me over the telephone that the present cable was put in on the 13th of May of this year, and I understand that the counsel is referring to the cable and the motive power.

Mr. DOUTHITT.—Not only the motive power but the belts, the machinery and all of the appliances and paraphernalia relating to the motive power and motor.

Mr. STANLEY.—Including the motor, the drum, including the belt that is now in use, the absence of

(Testimony of George E. Ward.)

cranks, crank shafts.

Mr. DOUTHITT.—The cable was put in there on the 13th of May?

Mr. STANLEY.—Yes. After consultation over the telephone with Mr. Sheedy I am prepared to admit that the motor and the conveyor is in practically the same condition, and all the apparatus in the same condition to-day as when the recent experiments were made by Mr. Young, and the experiments were made by Mr. Dennison. [768—686]

[Testimony of George E. Ward, for Plaintiff (Recalled in Rebuttal).]

Direct examination of GEORGE E. WARD, Plaintiff, recalled in rebuttal.

Mr. DOUTHITT.—Mr. Ward, did you visit the coal-conveyor the afternoon of June 16th?

A. Yes, sir.

Q. From your experience and knowledge regarding cables and the kind of cables used on the coal-conveyors and the work I will ask you what kind of a cable was in use on the coal-conveyor yesterday?

A. A Lang laid cable.

Q. What difference, if any is there between a Lang laid cable and the cable which was in use on the 8th day of July, 1912?

A. There is a big difference.

Q. Well, now, would you please tell the jury what that difference is, explain it?

A. A Lang laid cable is different entirely from the cable that was in use on the 8th day of July, 1912. The Lang laid rope is made of strands twisted to the

(Testimony of George E. Ward.)

left hand and the strand itself is going left handed.

Q. Yes?

A. And that cable is not pliable, it is a stiff cable, it is not a pliable cable. Whereas the cable that was in use on the 8th day of July, 1912, was a flexible nineteen-wire, three-quarter-inch diameter, right-hand rope.

Q. Six strands?

A. Yes, six strands and I think a manila core or a hemp core.

Q. A manila core? A. A hemp core, I think.

Q. A hemp core? A. Yes, sir.

Q. Now, what is the difference between the two with regard to the operation on a drum, we will say?

Mr. STANLEY.—Just one moment. We object on the ground that it has not been shown that the witness has had any experience **[769—687]** with this Lang cable, or seen it in operation on a drum or anywhere.

Mr. DOUTHITT.—Mr. Ward, have you ever had any experience while at sea or as a machinist with a Lang laid rope?

A. I have had,—I have seen Lang laid ropes, I have seen it back east, used back east and I have seen it on board ships.

Q. Are you familiar with the Lang laid ropes?

A. I am.

Q. And are you familiar with such ropes as were in use—as are in use at the coal-conveyor at the present time? A. What is that question?

Q. Are you familiar with such Lang laid ropes as

are in use on the coal-conveyor at the present time?

A. Yes, sir.

Q. Can you tell the difference between a Lang laid rope and a Roebling cable, that is a nineteen wire, six-strand, steel flexible cable, in their operation on the drum? A. Yes, sir.

Q. Well, now, will you please explain to the jury what the difference is between a Lang laid rope and a Roebling cable such as the one in use on the 8th day of July, 1912?

Mr. STANLEY.—I object to it on the ground that the witness has not been shown to be qualified.

Objection sustained.

Mr. DOUTHITT.—Have you ever observed a Lang laid cable in use over a drum similar to the one in use on the coal-conveyor?

A. Yes, sir, that is what I had reference to back east. Also that I had seen the Lang laid rope used on a drum.

Q. And elsewhere besides back east?

A. On ships, used for towing purposes.

Q. And when it is used for towing purposes was it wound around a drum?

A. They had a drum there for the purpose of taking it in when the ship would let go, then it was hauled in on a drum.

Q. Do you know the action of a Lang laid cable around a drum **[770—688]** such as was in use on the coal-conveyor of the Inter-Island Company—as is in use?

Objected to as indefinite.

(Testimony of George E. Ward.)

The COURT.—What do you mean by action; it ought to be limited?

Mr. DOUTHITT.—While the drum is in motion tell the jury the difference between the Lang laid rope in its work around a drum such as in use on the coal-conveyor and a Roebling cable?

Objected to on the ground that the witness has not been qualified.

Objection overruled.

Mr. STANLEY.—I would like to be allowed to examine the witness as to his qualifications?

The COURT.—You may do so, you may examine him further.

Examination of witness as to qualifications.

Mr. STANLEY.—Mr. Ward, when you first saw a Lang laid cable in operation when was it?

A. On board ship.

Q. What ship? A. In San Francisco.

Q. When?

A. When I was traveling back east, the towboats used it.

Q. When was that? A. 1911.

Q. And you left here in May of 1911, towards the end of May, and returned at the end of August, 1911?

A. Yes, sir.

Q. Now, on what ships going to San Francisco did you see a Lang laid cable in operation?

A. On towboats.

Q. What towboats?

A. In the Bay of San Francisco, I don't remember the names.

(Testimony of George E. Ward.)

Q. How was it that you came to observe it, where were you?

A. I was going over to the California Point to look at its coal-conveyor.

Q. What?

A. I was going over to the California [771—689] Point to look at the coal-conveyor, where this other coal-conveyor was and I was taken over by the coal-boat.

Q. California City Point, where were you going from? A. San Francisco.

Q. Where is that? A. Right across the bay.

Q. And how were you proceeding?

A. I was taken over by a towboat.

Q. By the ferries?

A. I was taken over by a towboat and saw towboats all around there besides that.

Q. Just a minute. Just answer my question. You proceeded, you made a trip over from San Francisco to the city point? A. Yes, sir.

Q. How many?

A. I went over there and back again.

Q. Went over and back again? A. Yes, sir.

Q. Is that the limit of your experience in San Francisco Bay of seeing a Lang laid cable in operation? A. No, sir.

Q. Well, what else have you seen in San Francisco harbor?

A. I was going to tell you and you stopped me.

Q. In San Francisco harbor?

A. I had made several trips out on a towboat as

(Testimony of George E. Ward.)

the man where I was staying with, Ed Waterman, was the chief engineer of that towboat and I had made several trips out with him on that towboat and I saw a Lang laid cable in operation.

Q. How long were you in San Francisco—you went back east, did you? A. Yes.

Q. How long were you in San Francisco?

A. About three weeks first.

Q. About three weeks? A. At first.

Q. And later? A. About a week.

Q. About a week? A. Yes, sir.

Q. So your trip east, that is from San Francisco to the east and return, occupied about six weeks; that is you had three **[772—690]** weeks in San Francisco first, and one week on the way back, that is a month, you have got a week going up to San Francisco from here and a week coming back, that is six weeks. Now, your trip east that is from San Francisco out east and back occupied about six weeks?

A. You didn't say how long I was in New York, how long I was in Paterson, New Jersey. I left here on the 23d day of May and I got back here about on I think the 23d of August, again. That was the time that I spent away from the Islands.

Q. Practically three months that you spent; out of that time you spent a month in San Francisco, three weeks when you got there and a week on your return? A. Yes, about that.

Q. And it took you practically two weeks going up and down from Honolulu to San Francisco?

(Testimony of George E. Ward.)

A. Yes, sir.

Q. That is right, is it not? A. Yes, sir.

Q. That makes six weeks out of those three months. Now, the other three weeks were spent traveling from San Francisco to the east, staying in those places and coming back to San Francisco.

A. Yes.

Q. Now, how many trips did you make, Mr. Ward, on these towboats in San Francisco?

A. I did not count.

Q. Well, give the jury an idea.

A. Oh, I made probably six or seven trips; I cannot tell you the exact amount that I used to go out with Mr. Waterman.

Q. And you went six or seven times?

A. Maybe six or seven times, I cannot tell exactly.

Q. And for what purpose did you go?

A. What is that again?

Q. For what purpose did you go?

A. Why, I went down with Mr. Waterman in the morning and we would take a trip; if a towboat was going to get hold of a ship or maybe hold of a barge or get hold of a scow and done all classes of work around there and I would stay on there until it made a trip and sometimes **[773—691]** two trips I would go out.

Q. You went on these trips because Mr. Waterman was your friend? A. Yes, sir.

Q. And you went there for pleasure?

A. Yes, I went there with him.

Q. For pleasure?

(Testimony of George E. Ward.)

A. On account of him, he was a friend of mine and I stayed with him and went out just for the purpose of seeing the towing there.

Q. Did you go out for the purpose of observing the operation of a Lang laid cable?

A. I went out for seeing how they towed there.

Q. Now, you say you had experience with a Lang cable in the east? A. Yes.

Q. Where was that? A. Handling coal.

Q. Where? A. That was in Paterson.

Q. How long were you in Paterson?

A. I think I was in Paterson maybe about a month, I think about a month, close to a month, anyhow.

Q. Out of the six weeks occupied from San Francisco going east and back you lived in Paterson and—

A. I lived in Paterson and stayed in Paterson, but I used to go over one day to New York and stay with my cousins there; I used to go over to Brooklyn and stay with my cousins there, and I would stay in Paterson with my uncle and my aunt, that is where we were living.

Q. What was the coal-conveyor that you saw in Paterson? A. For the purpose of a railway.

Q. What railroad? A. The Erie Railroad.

Q. Erie Railroad? A. Erie Railroad, yes.

Q. And what cable were they using there?

A. They were using the Lang cable.

Q. And what observation did you make of it there, what have you gone—what brought you there?

A. Why, I took an [774—692] interest in coal

(Testimony of George E. Ward.)

handling and I was where they were hauling this coal to the bunkers and I watched that and I saw the Lang rope out there, but that rope didn't make no curves, it was a straight line.

Q. It made no curves? A. No, sir.

Q. It was a straight line? A. Yes, sir.

Q. Now, you say that you observed the operation of that cable on the drum?

A. They had a large drum, yes, sir.

Q. You observed the operation? A. Yes, sir.

Q. For what purpose?

A. Why, to see how they worked that cable and see how the whole coal-conveyor was worked.

Q. Well, you didn't look at the drum?

A. Well, it was in my trade, Mr. Stanley, and I ain't going to look at the shelf to see what kind of machinery they were using, so I went and examined the machinery, too.

Q. Under what circumstances did you examine—did you observe the cable?

A. Because I wanted to see what kind of cable they used.

Q. That is what you were looking for, to see the cable, what cable they used?

A. Yes, I had experience down at the coal-conveyor and I had seen what the difficulties was down there with the cable and I naturally wanted to see what cable they used.

Q. That is what you were observing, the kind of cable they used? A. Yes, sir.

Q. And that is all? A. That is all.

(Testimony of George E. Ward.)

Mr. STANLEY.—I submit there is no qualification.

Objection overruled. Exception. [775—693]

Mr. DOUTHITT.—(Resuming direct examination.)

Q. What is the difference, Mr. Ward, in the Lang laid rope and a Roebling steel cable such as was in use on the 8th day of July, as it goes around the drum. Explain it particularly and fully?

A. The difference between a Lang laid rope and a pliable Roebling rope is that the pliable Roebling rope will hug the drum, it has a tendency to hug the drum, whereas the Lang laid rope will not hug the drum, if it gets any slack at all it springs from the drum; it does not hug the drum and that is where it gets its tension, where it gets its friction for doing the hauling purpose, the pulling, and there is where the benefit of a pliable rope is received and for to get the same on a drum with the Lang laid rope you have to take on considerably more weight in your box so as to be sure to keep it hugging on the travel where the pliable rope all that is necessary is to take the slack around from the drum. There is the true difference between a Lang laid rope and a pliable rope.

Q. And that is the difference between the rope that is now in use on this coal-conveyor and the rope that was used at the time that you were hurt?

A. Yes, sir.

Q. Now, you say that the Lang laid rope has a tendency, as I understand you, to spring from the

drum, did you say that? A. Yes, sir.

Mr. STANLEY.—Our objection goes to all of this as to the witness' qualifications.

Mr. DOUTHITT.—Due to what?

A. Due to the spring in the rope; it is not pliable, it is not flexible; it has a spring in it and it will naturally spring around; it is not a pliable rope for a cable.

Q. Can you take a piece of string, Mr. Ward, and illustrate by means of that string the difference between these two ropes? **[776—694]**

A. If one of the jury will simply hold that piece of string when I twist it. Now, that is a right-hand twist, turning that way is supposed to be a right-hand and I will twist that around right handed and I will twist this also right handed (illustrating).

Mr. COKE.—Are you twisting that as a Lang cable is twisted or as a Roebling cable is twisted?

A. This is according to the Roebling laid rope, that is why I am twisting the strands right handed.

Q. That is the right-hand Roebling rope?

A. Yes.

Mr. SUTTON.—I understand the Roebling rope is made both right and left handed.

A. Yes, and this one that I am explaining is a right-hand Roebling rope. Now, you see—let go of that. Now, it went that way naturally of its own accord. You will notice, now, that the strand is running left handed, whereas the twisting of the strand is twisted right handed and it naturally goes there, it has to, it don't make you hold it in that

(Testimony of George E. Ward.)

position, and I will let go and you will notice it will not come loose. Now, in making the left-handed rope I will have to make it the opposite way.

Mr. DOUTHITT.—Take it easy and do it slowly.

A. This strand has been made right hand, so I will have to untwist it again. Will you give me a piece of manila rope, so that I can take the fibres. I would simply have to do that. I will make you a right handed, that will act just the same as a left-handed one in the opposite direction instead of making it a left-hand rope a right-hand rope with a lay of a Lang rope. You will see the difference of the lay of the rope (illustrating by twisting a string). This is going right handed. Now, while I have showed you before that this will naturally turn to the left of its own accord, while I have to force that to make it a right to go against its own nature. I have to force. [777—695] that right handed now that is forcing it over.

Mr. COKE.—Mr. Ward, are you twisting that cable in the same manner that a Lang laid cable is laid?

A. The Lang is twisted left. I am not saying that the Lang rope is twisted right, but I am showing you the same thing forcing that to go against its own nature, showing it with a right hand instead of a left hand. If you get me a piece of rope I will show it.

A. JUROR.—It will go the same way if it is twisted in a right-hand direction?

A. It will be made forcing it over instead of let-

ting it take its own natural way.

Q. That is the way that the Lang cable is twisted, the other way though?

A. Now, that will explain the difference between the Lang rope and the common rope. Now, that has also a tendency to spring. Do you see the spring in that now?

Q. If it is wound around the drum if slack is given it will spring out? A. It has a spring.

Q. Even if pulled tight on the drum you say the spring is right there, what causes the spring?

A. That spring is forced there.

Q. And what is the purpose, Mr. Ward, of that spring?

A. It makes this whole cable harder than a pliable cable. A pliable cable is annealed, that is it is softened, it is pliable, whereas the Lang laid rope is hardened and there is a spring. You cannot wear a Lang laid rope as quick as you can a pliable rope.

Q. That spring is there for some purpose. When wound around the drum that spring is there for some purpose?

A. That spring is not there for meeting that spring for the purpose of the drum.

Q. No?

A. No, sir, it was made for the purpose of wear, to prevent wearing so quick, because it is not annealed. And there is a big difference between two cables, you might as well compare those two cables now that we have in illustration **[778—696]** as a piece of lead wire with a piece of steel wire; or take a

(Testimony of George E. Ward.)

piece of copper wire, compare it with a piece of steel wire, we have the difference right there before our eyes. Now, there is the difference that I am trying to explain to you.

Q. What makes that difference is simply the method or operation of winding it?

A. Winding and the hardness of the steel wire, it is not as soft as the pliable wire, different nature.

Q. They are both steel, though?

A. Yes, both made of steel; you can have annealed steel and hardened steel.

Q. What kind of a core have they in the Lang laid cable?

A. I would like to go down to the coal-conveyor and take something and pry it open and see. There are cables with a steel strand core, there are some with manila core, there are some with hemp, there are even some with cotton, that makes all the difference in the cable being pliable and soft.

Q. You don't know whether that steel core or wire core is in the Lang laid rope?

A. No more than I do of any cable that you show me now without my prying it open to see what kind of a core is in it. Here we have one open, now that I can see that is manila, I think.

Q. Then, you don't know that the flexibility arises from the fact that one is wound around the core or hemp or manila, and the other wire?

A. But I do know that if it had a steel core in place of a hemp or manila that it would be still

stiffer, still greater stiffer than if it had manila or hemp.

Mr. STANLEY.—I move that the answer be stricken out as not responsive to the juror's question.

The COURT.—It is so ordered.

Mr. DOUTHITT.—If the Lang laid rope has a steel core, what would the tendency be as to—would the spring in a Lang laid rope with a steel core be as much as it would with a Lang **[779—697]** laid rope with a hemp or cotton core?

Objected to as the witness has shown no qualification.

Objection sustained.

The WITNESS.—Your Honor, may I speak now.

Mr. DOUTHITT.—Do you wish to explain anything?

The COURT.—What is your statement?

A. No, your Honor, it is only what I explained so you will thoroughly understand that. I explained two ways of getting a spring in a wire, in the first place I made this little wire by hand, this little cord by hand and I showed how, by forcing anything against its nature, that will make a spring. That is one thing causes spring. Then in a different cord that takes on a spring, then I was asked the question about this Lang rope. I have not seen that Lang rope, the core, and I explained to you all that if you brought me a piece of cable and tied its end I don't know what's inside of it. The only way that I can find out is to pry it open.

The COURT.—You don't know what the core of

(Testimony of George E. Ward.)

the cable at present in use on the coal-conveyor is?

A. No, sir.

Mr. DOUTHITT.—In a flexible steel wire, such as was in use, a steel cable such as was in use on the 8th day of July, 1912, Mr. Ward, I will ask you whether such a cable would or would not have a tendency to hug the drum?

Objected to as not rebuttal.

Objection overruled. Exception.

(Last question read.)

A. Yes, it has a big tendency of hugging the drum. Can I explain more in regard to that in that cable?

Mr. DOUTHITT.—Yes, but why?

A. Because it is a flexible cable, there is no spring to take away after the tension has been put on and pulled taut there it hugs the drum very tight and there is a no spring there for to release that hug. Besides **[780—698]** that I want to explain to you that was a cable, that the parts of the strand had all been cracked, these little wires had all been cracked, that made that cable much more pliable still, because it was only the center or the inside of these strands which was holding together, it *is* was not these strands that you see it now on the cable, because they are parted and separated and there are twelve outside of seven in every strand. Therefore, there has only been twelve of every strand released, that makes that cable far more pliable and easier bent. In other words, there has been taken from that cable, six times twelve, which is seventy-two wires, more or less parted all around, still there re-

mains a balance inside there that have not parted and that makes that wire far more flexible and pliable.

Mr. DOUTHITT.—Now, Mr. Ward, in the event of a Lang laid cable being used on this coal-conveyor we will assume that a Lang laid cable is in use on the coal-conveyor in the same manner in which it was in use—is in use to-day or in use at the time you were injured; if the cable is stopped and the box is raised, I will ask you whether in your opinion, there would be any slack on the top of the coal-conveyor at the scale-house and if so, why?

Mr. STANLEY.—We object on the ground that the witness has not been shown qualified to speak.

Objection overruled. Exception.

(Last question read.)

A. Yes, sir.

Mr. SUTTON.—That is a Lang cable?

A. In raising this box that spring is here and it is also here and then it extends around the drum. Naturally there is four turns around the drum and as they lift the box that spring starts going and it springs all around, consequently the spring comes up to the top here, and [781—699] then the sag between every dolly will naturally take what it naturally can get and there you will find slack, but I do not think as these men was here as witnesses speaking of five this way and five that way, that they did not find no five inches down there.

Mr. STANLEY.—I move that that be stricken out.

(Testimony of George E. Ward.)

The COURT.—It is so ordered.

Mr. DOUTHITT.—Now, Mr. Ward, you observed that there was a—did you observe whether or not there was a belt used in connection with that motor which operates the coal-conveyor on your visit there yesterday? A. Yes, sir.

Q. Is has been testified here that the belt—you could move the belt or reverse the motor, you could turn back the drum by means of moving the belt; that could be done, could it? A. Yes.

Q. Could that have been done, Mr. Ward, with the engine—the condition of the engine was on the 8th day of July, 1912?

A. Do you mean if a steam engine was there in place of a motor and belt?

Q. Yes. A. No, you could not do it.

Q. Why not?

A. Because you have no chance to pull back, there was nothing to pull back with. There was nothing to pull back with, besides you have the piston to contend with.

Mr. STANLEY.—Have what?

A. Have the piston to contend with pressing that you *cannot back.*

Mr. DOUTHITT.—Was there any belt in use and operation at the time that you were injured on that machine? A. No, sir.

Q. On the engine. What is the difference between the machinery and the appliance as they exist now and the machinery and appliances as they existed at the time you were injured?

(Testimony of George E. Ward.)

A. Why, they have discarded the piston, the piston-rod, the cross-heads, the cross-head pins, the connecting rod, the crank-pin, the crank-shaft, it has all been discarded and they [782—700] have added on another shaft with a large pulley, three feet in diameter, onto this here with a pinion on for to turn the drum and that belt is run from this here three-foot pulley onto about a ten-inch pulley, between nine and ten, I did not measure it but it looked that small to me on the motor.

Q. And in regard to the power what is the difference?

Objected to as already asked and answered.

Objection sustained.

Mr. DOUTHITT.—What is the difference in regard to the weight at the box as it exists now, the time that you visited the coal-conveyor and the weight as it existed at the time you were injured?

Mr. STANLEY.—What do you mean as to the weight?

Mr. DOUTHITT.—The entire weight, what you call the weight or box, the pulleys and so on, do you understand that, Mr. Ward?

A. I understand you in two ways, you asked me if it was the pulleys, the same pulleys and box, the same box and then there is an addition to that box, can I explain that?

Q. Yes, I want you to explain it, the difference?

A. Yes, they have been filling in weight.

Q. What is that?

A. They have been putting in weights in the box.

(Testimony of George E. Ward.)

Mr. STANLEY.—Have you seen that, Mr. Ward?

A. What is that?

Q. Have you seen them putting in weights?

A. No, I saw the weights in the box.

Mr. STANLEY.—I move that the answer be stricken out.

The COURT.—It is so ordered.

Mr. DOUTHITT.—What is the condition of the weight to-day, the weights in the box compared with the condition as it existed on the 8th day of July, 1912? A. There is more weight in the box.

Mr. STANLEY.—That is objected to. [783—701]

Objection overruled.

The COURT.—Answer the question.

A. There is more weight in the box.

Mr. DOUTHITT.—And what does that weight consist of, do you know?

A. Scrap iron we call it, pieces of scrap iron and all kinds of iron they have thrown it in there.

Q. Do you *you* know from your experience on coal-conveyors and your knowledge of Lang laid ropes, Mr. Ward, whether it is necessary to have a greater weight which takes in the slack automatically in the box in the use of a Lang laid rope than in the use of a flexible steel cable such as was in use *of* the 8th day of July, 1912? A. Yes.

Mr. STANLEY.—I move that the answer be stricken on the ground that the witness has shown no qualifications.

Objection overruled.

(Testimony of George E. Ward.)

Mr. SUTTON.—And not proper rebuttal.

The COURT.—Objection overruled.

Exception.

(Last question read.)

A. Yes, sir, you have got to add weight where you have got a Lang laid cable in use, because you would have to put on weight to overcome that spring that is in the cable for to make it hug the drum. You will have to have pulling on that tail rope or the slack part of the rope coming from the drum, you would have to have more tension on that to make that hug to overcome the spring that is in the cable.

Mr. DOUTHITT.—Now, Mr. Ward, it has been testified here by Mr. Young that in his opinion that it was impossible for the cable at the time of your accident to be off the pulleys—no, at the time that he examined the cable it was impossible for that pulley which is, as I understand, is a Lang laid rope, the cable which is, as I assume, a Lang laid rope to be off the pulleys [784—702] in the manner which is described by the witnesses. Now, I will ask you, Mr. Ward, with the use of a Lang laid rope whether you would expect—whether the cable could get off in your opinion, whether the cable could get off the pulleys in that manner?

Objected to on the ground that the witness is not shown to be qualified.

Objection overruled. Exception.

A. Why, yes, the Lang laid rope having such a stiffness in it, it would not have the tendency of going around like that because it would have such a short

(Testimony of George E. Ward.)

turn to make on this side of the pulley. We have one of the pulleys right here. To bend the Lang rope that way why you would have an enormous strain on it, it is so stiff and hard, whereas the pliable rope as at the time of my accident it would naturally itself go that way.

Mr. STANLEY.—We object to that latter part as not responsive.

Mr. DOUTHITT.—That may go out.

The COURT.—The latter portion of his answer may be stricken out.

The WITNESS.—Your Honor, may I speak.

The COURT.—I think not, just answer the questions put to you, Mr. Ward.

Mr. DOUTHITT.—Mr. Ward, do you remember a conversation which you had with Mr. Gedge at your home at 801 or 803? A. 803 Young street.

Q. In this city? A. Kinau street.

Q. Kinau street about two or three weeks after you left the hospital? A. Yes.

Objected to as not proper rebuttal, no foundation having been laid.

Objection overruled. Exception.

Mr. DOUTHITT.—Did you have any conversation with Mr. Gedge [785—703] at your home at 803 Kinau street, about two or three weeks after you left the hospital? A. Yes, sir.

Q. Do you remember what that conversation was?

A. Yes, sir.

Q. What was the conversation, Mr. Ward?

A. Mr. Gedge came to the house and I was laying

(Testimony of George E. Ward.)

on a cot in the dining-room and he came to see me and he spoke about Mr. Kennedy taking control of the coal-conveyor away from him from being superintending engineer and placing Mr. Sheedy in his place. I asked him why and he said I don't know why. He says I can't say why Kennedy takes me away from the coal-conveyor after all the experience that I have had with that coal-conveyor and run it ever since it started discharging and loading boats and now he has placed Mr. Sheedy, a man who does not know anything about the coal-conveyor in my place.

Q. That was the conversation?

A. That was the conversation, sir.

Q. I will ask you, Mr. Ward, if you had any conversation with Mr. Gedge at the time when the conversation—when the "Guernsey," the ship "Guernsey" first came to Honolulu on the deck of the "Guernsey" relating to a dispute between the captain of the "Guernsey" and Mr. Gedge?

A. Yes, sir.

Objected to as not rebuttal, as incompetent, irrelevant and immaterial, and an attempt to impeach the witness on immaterial matters.

Mr. STANLEY.—It is too remote, the first arrival of the "Guernsey" was four years ago.

The COURT.—The objection is sustained on the ground of remoteness.

Exception. Exception allowed.

Mr. DOUTHITT.—Mr. Ward, it has been stated here by Mr. Gedge that it was pursuant to your

(Testimony of George E. Ward.)

recommendation that Mr. Akina was promoted as a luna on board the coal-conveyor, on top of the [786—704] coal-conveyor, I will ask you whether or not that is so?

Objected to as not rebuttal and immaterial.

The COURT.—The objection is sustained on the ground that it is not material.

Exception. Exception allowed.

Mr. DOUTHITT.—Mr. Ward, it has been testified in this case by Mr. Muirhead that he was in the habit of coming to the coal-conveyor every day, two or three times a day and at least once a day. I will ask you, Mr. Ward, if while you were there as the foreman of the coal-conveyor, whether Mr. Muirhead was in the habit of so visiting the coal-conveyor or did visit the coal-conveyor?

A. No, sir, he was not in that habit. I have discharged boats there, been on board the ship which has taken five and five and a half days and I have never seen Mr. Muirhead down near that coal-conveyor. Then there is times when I have seen him once while the coal-boat was in, he would just merely say good morning and maybe ask me how much coal was in this hold or something like that, then he would go away, off he would go. But I have discharged boats when he has never been near the coal-conveyor.

Cross-examination of GEORGE E. WARD.

Mr. STANLEY.—I understand from what you say that there were days that you would not see Mr. Muirhead there at the coal-conveyor?

A. I said that I had discharged boats there that

(Testimony of George E. Ward.)

took five days and never seen Mr. Muirhead down around the coal-conveyor.

Q. Never seen him? A. No, sir.

Q. Are you prepared to swear that Mr. Muirhead was not around [787—705] the coal-conveyor or any part of the coal-conveyor during these five or six days that you are talking about?

A. I have not seen him at the top of the coal-conveyor, I seen him on board the ship though.

Q. Are you prepared to swear that he was not there?

A. I say that I did not see him around there.

Q. And that is all. Now, Mr. Ward, you testified to examining the weight down here and finding that it was heavier or had more iron in it more than there was at the time you were hurt, that is right, is it?

A. Yes, sir.

Q. When did you examine the coal-conveyor, the weight, to see what was in it? A. Yesterday.

Q. What did you find in it?

A. I seen the iron in there.

Q. And at the time you were hurt, what was in it?

A. There was nothing in it.

Q. Do you mean to tell the jury that this wooden box down there, that there was nothing in it at all, and it weighed five or six hundred pounds?

A. Yes, sir; that is what I mean.

Q. And nothing in it?

A. There was no iron in it, just the weight of the box and the sheave.

Q. Nothing whatever in it?

(Testimony of George E. Ward.)

A. No, sir; there was nothing whatever in it.

Q. And did you estimate yesterday the weight of the iron that was in it?

A. I saw iron in it, I told you.

Q. I asked you, did you estimate the weight of it?

A. No, sir; I did not estimate the weight.

Q. So that you cannot say what the difference is to-day from what it was on July 8th?

A. Not exactly, no.

Q. Well, approximately?

A. Well, I can say that it weighed more than when I was down there.

Q. That is all that you can say? A. Yes, sir.

Q. Now, Mr. Ward, I understand, you have never seen either [788—706] the Roebling cable or the Lang cable, that is right, is it not, the Lang cable manufactured?

A. No, I have never seen one manufactured.

Q. Never seen either of them manufactured?

A. No, sir.

Q. Can you tell from an outside investigation of a cable whether it is annealed or not?

A. No, I can tell by trying it by hand.

Q. How do you mean?

A. By taking and trying it, bending it.

Q. You can tell whether it is annealed or not?

A. Yes, whether there is spring in it or not.

Q. You know what the process of annealing is?

A. Yes, annealing means making soft, to anneal means taking the temper out.

Q. And how is that done?

(Testimony of George E. Ward.)

A. By heating and gradual cooling, not dipping into cold water or anything, cooling suddenly will bring temper.

Q. Are you prepared to swear that Roebling cable is not annealed? A. Is not annealed?

Q. Are you prepared to swear that Roebling cable is not annealed, and that Lang cable is?

A. The Roebling cable, the pliable cable, is annealed cable.

Q. And is not the Lang cable a pliable cable?

A. No, it is not a pliable cable, it will not,—it is stiff, it has spring in it.

Q. Do you mean it is like a bar?

A. No, I don't say it is like a bar.

Q. Is it not a fact that both the Lang cable and Roebling cable are both pliable and both flexible?

A. I told you that the Lang cable is not a pliable cable; it is not called a pliable cable.

Q. What do you mean by pliable?

A. That it will bend [789—707] and stay there, pliable.

Q. Do you mean to tell the jury here that the cable in operation to-day on the coal-conveyor is not a pliable cable, Mr. Ward? Answer my question.

A. I am answering your questions.

Q. Do you testify now that the cable that was in operation there which goes around these pulleys, and is in use on that coal-conveyor is not pliable?

A. It has a spring in it.

Q. Answer my question, is it pliable?

A. Why, you can take a piece of steel rod with a

(Testimony of George E. Ward.)

little temper and it is pliable.

Q. I am not asking you about steel rods, but I am asking you whether or not the cable now in use is pliable.

A. You asked about the word pliable. A clock spring is pliable, there is temper in it, it is tempered.

Q. Is not the difference between the Roebling cable and Lang cable that one is more pliable than the other, more flexible than the other?

A. Yes, it is more pliable, but there is a difference in temper between the tempered spring and annealed spring.

Q. But it is a question of degree between being flexible and pliable?

A. There is a difference in a spring that has a tendency to go back to its original shape whereas an annealed one will not go back to its original shape, it is not the same thing for every spring down there will come back to its proper shape again, where with this annealed steel or iron it will not come back after the once squash down, that is the difference.

Q. Do you mean the Lang cable you cannot bend it down say as much as this?

A. I did not say you cannot bend it.

Q. And it won't go back?

A. I will even state that you cannot bend a wagon spring. The Roebling cable I told you that it won't go back to its original position. A spring will spring down [790—708] as far as you bend it and when you let go it immediately goes back to its original position, that is, the spring and the temper.

(Testimony of George E. Ward.)

Q. Is it not a fact that you cannot run a coal-conveyor of this kind with these curves without a flexible cable? A. Without a flexible cable?

A. Yes.

A. Why, it would be far better for you to use a flexible cable.

Q. Is it not a fact that you could not run a coal-conveyor down there with curves unless you had a flexible cable. Is it not a fact that you could not run a machine of that kind where the thing has got to go around curves and trolleys and everything else, unless it is flexible; that is a simple question?

A. Your question is whether—unless it is flexible, yes, if it is flexible you can run it there.

Q. And if it is not you cannot run it?

A. Certain you cannot run a piece of tool steel tempered hard around a curve.

Q. You say, Mr. Ward, that the Roebling cable will hug the drum, what do you mean by that?

A. What is that again, please?

Q. You say the Roebling cable will hug the drum; what do you mean by that?

A. It will hug the drum just the same as I am squeezing now (illustrating), it will hug the drum the same as you would hug a girl, I guess.

Q. I have never had as much of that as you have had, you know. You are a married man, aren't you?

A. That is another question; that is my business. I am not.

Q. Now, by hugging the drum it will stay by the drum; it will stay close to the drum.

(Testimony of George E. Ward.)

A. It hugs the drum.

Q. Is that while it is in operation?

A. While it is in operation and when you stop it, it still hugs. It is hugging in operation and even when the engine stops it hugs.

Q. And how about the Lang cable while it is in operation [791—709] will that hug the drum like you hug a girl? A. It does to a certain extent.

Q. Then when you state that the Lang cable would not hug the drum you do not mean that, but you mean not as much as a Roebling cable?

A. No, when you lift the box it will take the hug away; it will pull it away.

Q. When you testified in direct examination that the Lang cable will not hug the drum what you meant was it will not hug the drum to the same extent as the Roebling cable?

A. That *it* it; it will not to the same extent as the Roebling cable.

A JUROR.—That is providing that the weight, the balance weight on the two cables is the same, is it not?

A. Yes, providing that the weight is the same on the Lang as it is on the Roebling it will not hug. The Lang will not hug so good as the Roebling will.

Mr. STANLEY.—I thought you testified that in order to keep the friction on the Roebling cable, keep the tension on, you do not need as heavy a weight as you would in order to keep the tension on the Lang cable?

A. No, Judge, the opposite of what you said.

(Testimony of George E. Ward.)

Q. I understood you to say that you didn't need as heavy a weight to get the tension on the Lang cable as you do on the Roebling cable?

A. Yes, now you state it correctly before you stated the Lang rope.

Mr. DOUTHITT.—That is the case for the plaintiff.

[Testimony of J. M. Young, for Defendant (Recalled in Rebuttal).]

Direct examination of J. M. YOUNG, recalled for the defendant in rebuttal.

Mr. STANLEY.—Mr. Young, it has been testified frequently in [792—710] this case that there is an essential difference between the Lang laid cable and the Roebling cable, the difference being that the Lang laid cable is stiff while the Roebling cable is pliable and flexible and also that the Roebling cable by virtue of this difference has a tendency to hug the drum while the drum is in motion and also while the drum is at rest. Now, in your opinion, will you state to the jury whether or not there is any essential difference between the Roebling cable and the Lang laid cable. They are both the same diameter cables. In other words, calling your attention to the cable that you observed on the Inter-Island Steam Navigation Company's coal-conveyor plant at the time of your examination about a year ago which, as I understand, was a Roebling cable similar to the one on this table except it was a right hand instead of left hand, and also call your attention to the cable now in use on

(Testimony of J. M. Young.)

that conveyor which as I understand is a Lang laid cable?

Objected to as incompetent, irrelevant and immaterial and not sur-rebuttal.

Objection overruled. Exception.

A. Well, in order to make a proper answer to that question I should have to describe the two different kinds of cables.

Q. Proceed with the explanation?

A. The Lang laid cable is manufactured by nearly all the cable companies. It is manufactured by the Roebling people, by the Trenton Iron Works, by the American Steel & Wire Company, by the Waterbury Company, and a number of other companies, and it is simply a style of cable that was devised by a man named Lang, an Englishman or a Scotchman, I forget now which, in order to obviate a certain wear and to produce a more symmetrical cable after it had been worn down and its essential difference from an ordinary standard cable is that the strands, the wires, are laid into the strand in the same direction that the strands are laid into the rope. **[793—711]**

Q. Well, on that point, what is the difference then in that particular in a Lang laid rope or a Roebling cable?

A. Well, the Lang laid cable may be a Roebling cable.

Q. I mean the Roebling cable that was used at the time? A. You mean the standard cable?

Q. Yes, standard cable?

A. The standard ordinary cable, the difference is

that in a standard cable the wires are not laid in the same direction that the strands are laid that then makes it possible of course, for one wire to be bent over another one in the process of use of the cable so that it is subject to additional wear, that is more wear than a Lang laid cable would be subject to. It is evident that the wear on a Lang laid cable is less for the reason the wear is more uniform throughout the entire length of the wire it presents a longer surface for abrasion against the drum and rollers, so that there is more surface to wear on, therefore, the wear at any individual spot is less. Those are the essential differences. Now, in two cables—rather if a cable is made up out of certain size wire into three-quarter inch rope on the standard plan, and another rope is made up to the same size wire, the same number of wires in a Lang laid rope, the only difference then will be in the rope and it is generally conceded that a Lang laid cable made up under the same specifications as to the number of wires, number of strands, is somewhat more flexible than a standard cable.

Q. Have you any authority for that statement, Mr. Young; if so, give it? A. Yes, I have it.

Q. Please produce it.

A. It is in those books there.

Mr. DOUTHITT.—We object to it on the ground that the witness has not shown his qualifications with reference to a Lang laid cable.

A. The word Lang laid cable was never mentioned, if I may [794—712] be permitted to say so, as I

(Testimony of J. M. Young.)

recall it; I mentioned about a Lang laid cable, I think I recollect about that and stated there was a Lang laid cable in operation. In justice to myself I should make a statement about that. I have been using Lang laid cable ever since I have been connected with cable work. They frequently come in every now and then; there is a Lang laid cable used for different purposes. I have spliced them and used them along with other cables, and if I am competent to speak about a Lang laid cable—it seems to me I should be competent to speak about a Lang laid cable. I don't know what constitutes qualification.

Objection overruled.

A. One reason that the Lang laid cable is not used more than it is used is because it is a more expensive cable to manufacture; it costs more. And another reason is that it is a more difficult cable to splice on account of the lay of the wires and strands going in the same direction. It is a very difficult cable to splice and the splice is more apt to break loose and come out and it causes more trouble in doing it than the ordinary cable. That is one of the difficulties that militates against its more general use. I have here a catalogue of the Trenton Iron Company of the date of 1902, which has a paragraph descriptive of the Lang laid cable and Lang laid rope, and if you wish—

Mr. DOUTHITT.—No, we don't want anything of that kind.

The COURT.—You stated that you had authority

(Testimony of J. M. Young.)

that the Lang laid cable is rather more flexible than a standard cable.

A. It is just a paragraph about a dozen lines, I suppose.

Mr. SUTTON.—It is not a question about the length of the line. It is not recognized that a catalogue is standard authority.

A. Suppose we take Kent; that has been admitted, I suppose. **[795—713]**

Q. That is Kent's pocket-book again?

A. Yes, this is Kent's pocket-book. This edition is 1901. This is a somewhat earlier edition than the one that Mr. Douthitt referred to, page 229.

Q. What page, Professor? A. 229.

Mr. DOUTHITT.—We do not understand that this is Mr. Young's experience; he is simply reading this from books.

Mr. SUTTON.—We asked Mr. Young to produce authority and he is now referring to the same work that Mr. Douthitt referred to.

The COURT.—It is recognized as authority among engineers, is it not?

A. I don't know whether I would describe it in that way. It is certainly an authority. I don't think you will find a mechanical engineer in America who has a standing who has not a copy of Kent, perhaps several editions of it because it is a book that is issued extensively and in order to keep up with the latest practice you certainly must have a copy of Kent.

Mr. COKE.—The statements made by the witness are not in response to any question.

(Testimony of J. M. Young.)

The COURT.—It was in answer to my inquiry as to whether Kent was a standard work on engineering. Is there any objection to the use of this Kent's pocket-book?

Mr. DOUTHITT.—None.

A. (Reading from Kent's Pocket-Book.) "Lang laid rope:

"In wire rope, as ordinarily made, the component strands are laid up into rope in a direction opposite to that in which the wires are laid into strands; that is, if the wires in the strands are laid from right to left, the strands are laid into the rope from left to right. In the 'Lang Lay,' sometimes known as 'Universal Lay,' the wires are laid into the strands and the strands into rope in the same direction; that is, if the wire is laid in the strands from right to left, the strands are also laid [796—714] into rope from right to left. Its use has been found desirable under certain conditions and for certain purposes, mostly for haulage plants, inclined planes, and street railway cables, although it has also been used for vertical hoists in mines, etc. Its advantages are that it is somewhat more flexible than rope of the same diameter and composed of the same number of wires laid up in the ordinary manner; and (especially) that owing to the fact that the wires are laid more axially in the rope, longer surfaces of the wire are exposed to wear, and the endurance of the rope is thereby increased. (Trenton Iron Co.)"

Mr. SUTTON.—Have you any other authority on that proposition?

(Testimony of J. M. Young.)

A. I have a work, the American Wire Rope, the American Steel & Wire Company, which is one of the subsidiary corporations of the United States Steel Corporation.

Q. Is that a catalogue or a work on the subject?

A. Why, that is a catalogue. In fact the smaller works are catalogues, but you understand that the manufacture of wire rope and also its use is a subject which has been developed in America to a much greater extent than it is in most other countries and for that reason information on its manufacture and use has to be obtained from the manufacturers and particularly Kent, himself, when he is gathering data for his hand-book, takes this information from the Trenton Iron Company or from the Roebling book.

Q. Even that being so we could not very well take the statements from the catalogue?

A. Well, in the same way that Mr. Kent has taken that cable which Mr. Douthitt produced yesterday on rope haulage, that was taken from Hunt's catalogue.

Q. It has also been testified in this case, Mr. Young, that the cable of the type in use at the time of Mr. Ward's accident, Roebling standard, six strand, nineteen wire, right-hand cable, was annealed and consequently the strands were soft and stayed in [797—715] the position in which they were set. Will you state whether or not—and will not return to the original position. I understood it was like a piece of lead. I think that was the illustration of the witness that the Roebling cable was so pliable that

(Testimony of J. M. Young.)

all you had to do was to bend it into position and it would stay. I may mention that it was so soft that it would not return to the original position, the testimony being that the cable was annealed and pliable and would not return to its position after being bent. Now, would you kindly state, Mr. Young, whether you know or not whether wire cables, either the Roebling standard, whether built in the style of the wires, the strands being wound in the direction opposite to the direction of the winding of the wires or whether it is laid in the Lang lay whether either of those or both are annealed or not?

A. Well, I don't believe that an annealed wire cable could be secured from the manufacturers except by a special order.

Q. Why?

A. Cables are not ordinarily made of annealed wire, for this reason that the annealing process robs the wire of a very large proportion of strength and of all of its elasticity and those are very desirable qualities in a steel cable and the manufacturer would not put them out in that form unless it were on a special order and I can see no reason in this particular case of having an annealed cable, because it certainly would not give the length of life and not be so satisfactory. The process of wire manufacture, you understand, consists of drawing a rod of steel, a small rod of steel through a die, a hardened steel die, and the process of drawing hardens up the exterior portion of the wire in such a way as to increase its strength and also makes it more elastic, and for that

(Testimony of J. M. Young.)

reason the strength of the steel wire is very much greater in proportion to its area than an equal area of ordinary steel. A piano wire, for instance, which is high drawn wire, is of very high strength. Well, it [798—716] goes up as high as three hundred and fifty thousand pounds per square inch, and that is largely due to the process of wire drawing which increases the strength and rigidity and increases the elasticity and also very much the strength; it increases it very much indeed. Now, that being so, you can readily see that it would militate very much against the strength and usefulness of a cable to anneal it and I can see no reason for doing it; and so far as this particular cable is concerned I did not examine it to test it to see if it is annealed wire, but that phase of the situation never occurred to me because it would be such a foolish thing to do.

Q. Tell me this, Mr. Young, if such a wire, such as the wire in the cable at the time of Mr. Ward's accident had been annealed, if you bent it in any position, would it return to its original position as soon as the pressure was taken off or would it have a tendency one way or the other?

A. Well, if a kink were made in it the kink would remain in the wire and it would not return to its position so readily as one made out of ordinary cold drawn wire.

Q. But would there be any difference in the tendency of a Roebling cable standard make such as was in use at the time of Mr. Ward's accident, from a Lang lay rope such as is in use at the coal-conveyor

(Testimony of J. M. Young.)

plant at the present time in its tendency to hug the drum?

A. No, I don't think there would be a particle of difference. Of course, it is understood that a new rope, a rope which is brand new right off the coil will not behave quite the same as a rope that has been used and a rope that has been in use is somewhat more flexible than a new rope. Hence an old rope that had been in use would not have quite the same facility for slipping around the drum or in giving any trouble of that kind, because a new rope is also somewhat more slippery; it has a harder surface and it is somewhat more rigid. That applies to all classes of cables; that is a general rule. [799—717]

Q. From your knowledge of the Roebling and Lang lay cables, as I have referred to them, the standard three-quarter inch, from your knowledge of those cables, would you say that it would be possible or impossible for a Roebling cable used for eleven months or ten months and slightly worn on the outside with pieces of wire sticking out one-sixteenth to an inch from the cable, would it be possible for that cable to be put in the position testified by Ward as having been its position at the time of the accident?

Objected to as not sur-rebuttal.

Mr. SUTTON.—I wish to change the word possible to difficult.

Mr. DOUTHITT.—We object to it on the ground that it is not sur-rebuttal.

Objection sustained. Exception.

(Testimony of J. M. Young.)

Cross-examination of J. M. YOUNG.

Mr. COKE.—Mr. Young, the statement made by Kent that a Lang lay rope is inclined to flexibility—does not that mean that it is inclined to be springy?

A. No, not necessarily. I may illustrate that by another example. Suppose we consider a piece of soft cotton cord which would be extremely flexible; soft cotton does not have very much elasticity or springiness. We could also consider a piece of hemp cord, wound in a slightly different way that would also be flexible and would not have this elasticity or this quality or property of coming back into its original position or shape, form or outline. I don't think that those two qualities necessarily go hand in hand.

Q. Well, then it might not be so, but as a matter of fact it might be so, and that might be what is referred to by Kent; is [800—718] not that true?

A. Oh, no, Mr. Kent referred there to the matter of running over a sheave. You understand that cables in nearly all cases must run over a sheave or pulley in their use and a cable that will run around a pulley more easily will be subject to less wear, less friction, and will absorb less power in the operation. Of course, you understand that in a cable running around a drum or a pulley that the greater the stiffness or the greater the rigidity the larger the proportion of power absorbed in that way which is lost power. Even in a leather or a rubber belt that is present to a very high degree and a considerable portion of the power is lost by useless friction, and the one feature in connection with the Lang laid rope

(Testimony of J. M. Young.)

is to eliminate as much as possible that useless friction by having the fibres of the rope parallel to each other so that they do not cut or break one another. You understand that in a standard cable, a cable that can be easily spliced and cheaply manufactured itself, it is a definite fact that wires bent over each other the one wire bending over the other tends to cut the other wires thereby weakening the cable and lessening its life which is eliminated in the Lang laid rope and is not a question of elasticity at all because the elasticity is the quality of the individual wires which go to make up the cable.

Q. Well, you mean, then, Mr. Young, that if you bent a Lang laid cable it will tend to come back into its natural position more readily than one of what you call a standard made cable?

A. No, I don't mean to say that, their action in that respect would be about the same, I don't think that you can detect the difference. I think that they will remain in just about the same way, provided, that of course they are made up of similar wires and the same number of wires with the same kind of a core.

Q. Do you know how many strands are in the Lang laid cable?

A. The Lang laid cable as a rule does not have quite as [801—719] many strands as the ordinary cable, that is in the process of manufacture. It is more difficult to make a Lang laid cable with a high number of strands, consequently it is generally made with a somewhat smaller number of strands.

(Testimony of J. M. Young.)
In this particular rope, however, I could not say just what the number of strands is, because I have not cut it and counted the wires but if the wires are the same size throughout and the same diameter of cable and the same weight per foot, of course it would have the same number of wires.

Q. Well, now, Mr. Young, why is this cable more diffcult to make than the ordinary one what you call the standard cable, what makes it more difficult to construct?

A. Well, it is simply a physical fact that a large number of strands roll always in the same direction, have a greater tendency to give difficulty in laying up. Of course, you understand, in the standard cable they knit each other together more readily, more perfectly.

Q. Their tendency is to hug each strand, the tendency is to hug onto the other on account of the way it is made.

A. Not to hug, I cannot say hug.

Q. Well, go together?

A. The strands cross over each other and then in case of pressure or movement in the cable these strands will see-saw back and forth over each other, which results in a tendency in the wires to cut themselves.

Q. Like the Roebling cable, the standard cable?

A. It has a greater tendency to interior fracture of the wires than the Lang laid cable.

Q. In the Lang laid cable the tendency is for it to flare apart, is it not, for instance, if you cut the

(Testimony of J. M. Young.)

cable; if you cut the Lang laid cable in two is not the tendency of that cable then, the strands of it to flare apart?

A. Well, any cable will tend to do that but that quality is somewhat greater [802—720] in a Lang laid cable.

Q. On account of the fact that the strands of the Lang laid cable have been forced over, the tendency is for them when the cable is cut, the tendency is for them to flare back into their natural status, is not that true? A. Well, that is true in any cable.

Q. Is it not more true in a Lang laid cable?

A. No, the same tendency is present in individual wires, but in an ordinary standard cable the wires are restrained more effectively by their adjacent contiguous neighbors holding them back, but the same tendency is there in the wire although in the one case it is somewhat more restrained than the other.

Q. Well, the tendency without regard to that, the fact still remains that the Lang laid rope would flare out and become more separated?

A. Well, I just answered that question a moment ago. I said, yes, that it was slightly more inclined to open up and that is one of the disadvantages of the Lang laid cable, and militates against an easy, quick, rapid and economical splice, just that quality in splicing the rope. It is desirable that the strands should lie together as well as possible so that in moving one of the strands the other two would retain their normal position more readily so that the

cable might be spliced with greater facility.

Q. In splicing the Lang rope, cable the difficulty is that there is more strain in the strands, there is more disposition for them to get out of place?

A. Well, there is a greater disposition.

Q. And that makes it more difficult?

A. No, not to come apart, undersand there is a greater disposition for the strands to lie down together to close up the space.

Q. That is due to spring, is it not?

A. No, not necessarily, it is due a part of it to the surface of the wires and [803—721] to the fact that there is a restraining influence, if you consider a portion of this standard cable you find that the wires are bent in opposite directions and there are two opposed forces which tend to balance and make it all a more stable composition.

Q. That is it, and with the Lang laid cable that reason does not exist, is not that true?

A. It exists to a certain extent, the difficulty of placing arises in that the strands want to drop down and close up the space.

Q. Let me ask you further, Mr. Young, is it not a fact that a new cable is more springy, has more springiness to it than an old cable, didn't you make that statement all right?

A. I made the statement a number of times that a new cable presented a harder surface, more unyielding, and was more apt to slip on pulleys and drums than an old cable.

Q. And is it not slightly more springy?

(Testimony of J. M. Young.)

A. That must be qualified, you understand the springy quality of the cable depends upon the characteristics of the wire of which the cable is manufactured, and the springiness being a function of the cross-section will be in the same proportion as this is worn down and if it were made originally of a springy, hard wire and you continued to wear the cable down, *it* springy quality would remain in the proportion of its cross-section. Now, the facts are that in a Lang laid rope the strands themselves are not so apt to be broken and the springy quality would be proportionate to the number of wires that remain good, perfect, unbroken.

Q. Let me ask you there, Mr. Young, is it not a fact that every time one of the wires of the cable is broken by reason of use or any other cause, is it not a fact that the springiness of that cable is decreased to a certain extent?

A. Well, if the cable were made up say of a hundred wires and you broke one of them the total strength would decrease by one per cent.

Q. And the springiness of the cable would also be decreased, wouldn't it?

A. Well, not in the same proportion because [804—722] it is very likely that the wire broken is on the inside. Now, when the cable is stretched around the drum or put in a strained position there is a greater stress thrown on the exterior wires and they are the ones which give to the cable its springiness, because they are the ones that are stressed and that *if* a function that is rather surprising and it is

(Testimony of J. M. Young.)

a function that is employed to a very large extent all in the designs of steel booms and girders. We know that the stress occurs chiefly on the top and bottom of steel girders and the same is true in the cable, and there is some strain there and the cable's top and bottom are stretched to a maximum while the wires in the center are stretched to a minimum so that the springiness is not necessarily decreased if you break a wire in the center.

Q. Did you ever have occasion to reel up an old cable that had been used and was stranded throughout to reel it? A. Yes, many times.

Q. State, Mr. Young, whether that is more difficult to do than to reel a brand new cable?

A. Well, a new cable is always more difficult to handle in any way than an old cable.

Q. And the fact *is* that the tendency of the new cable is to spring away from the reel or from the drum over which it is being reeled to a far greater extent than that same tendency exists in an old cable, is not that a fact?

A. Well, it is due to a very well known quality. When a rope is first put in commission, the rope has not yet found itself, it is made up of fibres which have been placed together and they have not been knitted to a homogeneous cross-section and some wires are stretched somewhat harder than others and it is in more or less a strained condition considering the individual wires. After it has been in use for awhile and been pulled into shape and worn down, has found itself; in other words, it will give very much

(Testimony of J. M. Young.)

less trouble in coiling and uncoiling and of course a cable which has [805—723] been worn and in which a large number of strands have been broken, why its flexibility is somewhat decreased, that is a perfectly natural conclusion.

Q. Very greatly decreased, wouldn't it be, Mr. Young, if a cable that is stranded throughout the entire length and the strands sticking out, we will say, the wires sticking out from a quarter of an inch to an inch throughout the length of the cable, the flexibility would be very greatly decreased from that of a new cable, is not that true?

A. Yes, it would be somewhat less.

Mr. STANLEY.—That is our case.

A JUROR.—In regard to that box there, when you examined that and made any experiments with that plant a year ago, do you know or remember the net weight in the box?

A. Do you mean the exact number of pounds?

Q. No, the net weight?

A. Why, I did not examine the box carefully.I did not measure it or anything like that, I saw the weight there and as far as I know it is about the same weight as is on now.

Q. Did you look inside, Mr. Young,

A. No, I did not, I did not look inside, but considering the action of the box the way it was behaving and performing, the way it was discharging its duties I should say it was about the same weight as was there before.

Q. You don't know, you didn't examine it?

(Testimony of J. M. Young.)

A. No, I did not weigh it, I did not measure it.

Q. Did you measure it the other day when you were there?

A. No, I did not, in fact I could not swear to the exact weight of the box.

Q. Didn't you give the weight of the box in your testimony?

A. I gave the approximate weight of it.

Mr. COKE.—When you referred to the weight of the box, Mr. [806—724] Young, you took into consideration, also, the weight of the sheaves that were above it and the chain, the entire equipment that hung from the roof, the sheaves, the box and chain?

A. Yes, sir, I meant the entire weight of the whole mechanism, including pulley and all.

GEORGE E. WARD

vs.

INTER-ISLAND STEAM NAVIGATION CO., LTD.

The foregoing 725 pages constitutes the complete record of evidence and proceedings in the above-entitled cause.

J. W. JONES,
Official Reporter. [807—725]

[Opinion of Supreme Court, Territory of Hawaii, Filed March 24, 1915.]

In the Supreme Court of the Territory of Hawaii.

OCTOBER TERM, 1914.

GEORGE E. WARD

vs.

INTER-ISLAND STEAM NAVIGATION COMPANY, LIMITED, a Hawaiian Corporation.

ERROR TO CIRCUIT COURT, FIRST CIRCUIT.

Hon. W. J. ROBINSON, Judge.

Argued February 15, 1915. Decided March 24, 1915.

ROBERTSON, C. J., WATSON and QUARLES, JJ.

Master and Servant—Negligence—Defective Appliance.—If the master negligently furnishes unsuitable appliances for conducting his business by reason of which his servant is injured, he is responsible in damages to the servant for such injuries, although the latter may have been negligent, unless the negligence of the latter was the proximate cause, or a proximate cause, of the injury.

Same—Proximate Cause Question for Jury.—Whether an act of negligence is the proximate cause of an injury is a question for the jury to decide where the evidence is conflicting; or where the answer depends upon matters of discretion, experience and judgment; and in all cases where more than one inference may be

reasonably drawn from the facts which the evidence tends to prove.

Same—Intervening Cause.—The master is not exempt from liability for an injury to his servant, caused by a defective appliance, by reason of an intervening act or cause, where the latter grew out of, was related to, and made necessary by, the negligence of the master in furnishing such defective appliance. [808]

Instructions—Interest of Witness.—An instruction which told the jury to take into consideration the interest of the plaintiff in the result of the suit when weighing his testimony was properly refused, especially as the Court had instructed the jury that in weighing the evidence of witnesses they should take into consideration the interest, if any, of the witness, in the result of the suit.

Verdict—Excessive Damages.—A verdict for $13,000 damages held to be not excessive where the evidence shows that the plaintiff was a strong, healthy, robust man at the time of the accident, forty years of age, earning six dollars per day, and by reason of the injury complained of suffered a fracture of the skull, concussion of the brain, a central dislocation of the hip, a distortion of the spine, impairment of vision and hearing, considerably diminished earning capacity, and had continually suffered great physical pain; the assessment of damages being left, by law, to the discretion of the jury, whose verdict will not be disturbed unless so excessive

and outrageous, under the evidence, as to demonstrate that they permitted their passions and prejudices to mislead them into giving a verdict against the rules of law. [809]

Opinion of the Court by QUARLES, J.

At the conclusion of the evidence on behalf of the plaintiff (now defendant in error), at the first trial, the Circuit Court entered judgment of nonsuit, in favor of the defendant (now plaintiff in error), to review which, the plaintiff sued out a writ of error in this Court, and the judgment of nonsuit was reversed. We will here refer to the former decision of this Court (*ante,* page 66) as showing the material facts. An examination of the record now before us shows that the evidence is substantially the same so far as the plaintiff's case is concerned, as at the former hearing. Upon the return of the case a new trial was had and a verdict for $13,000 damages rendered in behalf of the plaintiff; and, to review the judgment entered thereon, defendant has sued out a writ of error in this Court. In the former devision this Court held that the contention of the plaintiff that the negligence of the defendant in furnishing a cable which was burred and unsafe was the proximate cause of the injuries, which he sustained, should have been submitted to the jury, on the evidence, under proper instructions. The defendant has assigned a number of errors of law occurring during the progress of the cause, some of which have not been argued, some abandoned, and some of them relied upon for a reversal of the judgment now to be reviewed. The principal contention

of the defendant now, is, that the Court erred in refusing to give its request for an instructed verdict, basing this contention upon the ground that, under the evidence, the question as to the proximate cause of the injury was one of law to be decided by the Court, and not a question for the jury. It will thus be seen that the principal question before us is the same, in a different form, as that before us at the former hearing.

After full consideration we are of opinion that the former decision in this case is correct, under the evidence disclosed [810] in the record, and under the authorities. We therefore adhere to the former decision, and hold that the question of proximate cause was properly submitted to the jury. It is contended, with much earnestness, on behalf of the defendant, that the defective cable described in the former decision, was not of itself, dangerous; that after it came off the pulleys, and the engine was stopped, it was inert, and incapable of injuring the plaintiff; that it did not injure the plaintiff, and was not the proximate cause of the injury, and, at best, it only furnished the *occasion* for the plaintiff going to replace the cable on the pulleys. If the cable came off the pulleys by reason of its worn condition, as some of the evidence tends to show, and in doing so had struck the plaintiff and injured him, it would follow that the use of the cable in such condition was negligence, and the proximate cause of such injury. But, it is the duty of the master to furnish suitable and safe appliances for his servants to conduct his business with, and this duty is not fulfilled by sim-

ply furnishing appliances that may be used, but which, owing to their defective condition, are liable to be misplaced and thereby necessarily subjecting the servant to extraordinary risks by replacing them. In other words, the assumption of the ordinary risks of an employment by the servant does not extend to those risks arising from defective machinery or appliances, where, as in the case at bar, the defects are known to the master, and, at the complaint of the servant, he has promised the servant to replace the defective appliance with one that is suitable. The jury were justified in finding from the evidence three facts which are material to the issues in the case, viz., (1) that owing to the burred condition of the cable, strands of wire protruding from it from one-sixteenth to one-quarter of an inch, it had a tendency to climb up on, and run off, the pulleys; and, therefore, was not suitable for the purpose [811] for which it was necessarily used; (2) that the defendant promised the plaintiff to replace the cable with a new one, and failed to do so; and (3) that defendant's neglect to replace the defective cable with a new one, made it necessary for the plaintiff to leave his usual work and go upon the elevated track of the defendant (a height of about 25 feet) thereby incurring an extraordinary hazard which would not have existed if a suitable cable had been installed. The jury were also justified in finding that a man of ordinary care and prudence, under the circumstances, would naturally apprehend that the cable would come off the pulleys; and the foreman, Akina, being absent, under such circumstances

plaintiff would go and attempt to replace it; that being on an elevated trestle, 25 feet above ground, injury to plaintiff would propably result.

We will notice the principal authorities cited by the defendant to sustain the contention that the defective cable was not the proximate cause of the injury sustained by the plaintiff, and that that question should have been decided by the Court by instructing the jury to find for the defendant. In the case of Carter v. Lockey Piano Case Co., 177 Mass. 91, the Court directed a verdict for the defendant upon the ground that the injury was caused by the negligence of a fellow servant of plaintiff while operating an elevator in failing to use a stopping cable or clamp, there being no negligence of the defendant in failing to supply suitable and safe appliances. In the case of Mo. Pac. Ry. Co. v. Columbia, 65 Kan. 390, the deceased had worked for the defendant seven years, the last five as fireman on one of its engines; during all that time the defendant had kept piled on its platform at Langley, where the accident occurred, a pile of grain doors, from eleven to fifteen in number, conspicuously placed from fifteen to twenty-two feet from the track, by which the deceased had passed [812] about six hundred times; along its lines the defendant, where there were grain elevators, kept piles of grain doors stored near such elevators, and at stations where there were no elevators (such as Langley), kept such doors piled at the station; the accident whereby deceased lost his life was caused by the grain doors being blown off the platform on to the track, by a violent storm, amounting to a gale;

no similar accident had ever occurred before on defendant's road; that the accident would not have occurred but for such storm. These facts were found in a special verdict by the jury, being submitted to them. The jury also found that the wind storm was not the proximate cause of the accident, but the negligence of the defendant in piling the grain doors on an exposed platform was the proximate cause, and found a general verdict for the plaintiff. There was no evidence to show how long the doors had been on the track prior to the accident, or that any officer or agent of the defendant knew that the doors were on the track. On appeal, the special verdict was treated as finding the material facts in favor of the defendant, and the Court held that the conclusion of the jury as to the proximate cause of the accident was inconsistent with the facts found, holding the accident to have been caused by the act of God, one which no reasonably prudent man would have anticipated, set aside the verdict and directed the trial Court to enter, in accord with the special verdict of the jury, a judgment in favor of the defendant. In Leavitt v. Ry. Co., 89 Me. 509, the injury resulted from the independent act of a contractor, not of the defendant, and the controlling principle of the decision is that an employer is not responsible for the negligent acts of a contractor, or his servants, when they act independently and are not under the control and direction of the employer. In the case of Empire State Cattle Co. v. Atchison, etc., Ry. Co., 135 Fed. 135, 140, plaintiff sought to recover damages for loss of [813] cattle in an unprecedented flood, on the

ground that it had been negligent in delaying the shipment, and claiming that if there had been no delay in making the shipment, the cattle might not have been lost. There, the Court properly held that the defendant was not liable for an injury caused by the act of God which it could not reasonably have apprehended. We do not regard those cases as in point here.

We will cite a few authorities in addition to those cited in the former opinion in this case, which recognize, and, as we think, sustain the principles applicable hereto. In Peoria, etc., Ry. Co. v. Puckett, 42 Ill. App. 642, a brakeman was required to disconnect cars while they were in motion, and although held to have assumed the extra hazard of doing so, the Court said, at page 649: "If a brakeman be required to thus do such work, and while attempting to perform it with care and prudence commensurate with the increased danger of such duty he is injured, not by some peril attendant upon the manner of doing the work, but by a danger arising from a failure of the railroad company to use reasonable care to discharge a duty incumbent by law upon it, no reason is preceived why a recovery may not be had for such injury." "It is the risk of ordinary perils incident to the service that the employee assumes, not the hazards of extraordinary risks added by the failure of the employer to perform the duty enjoined upon him by law." (Rogers v. Leyden, 127 Ind. 50.) In Knapp v. Ry. Co., 65 Iowa, 91, 95, the defendant had permitted its roadbed to get into bad condition, being lower at one place than it should be, whereby a train

was derailed, and its servant, an engineer, was injured. It was claimed by the defendant that the negligent manner in which the engineer used the lever was the proximate cause of the injury. The Court said: "True it is that reversing the lever is one of the ordinary hazards of the plaintiff's employment; yet, if the negligence of [814] the defendant required such act to be done at that particular time, and the plaintiff was not guilty of negligence, but, on the contrary, acted prudently, with due regard for his own safety and the safety of others, then the defendant is liable, because the negligence of the defendant is the proximate cause of the injury." And in the same case, reported in 71 Iowa, 41, the Court said: "It is next insisted that the verdict is unsupported by the evidence. This claim is based upon the position that the injury to plaintiff resulted from his arm or hand being caught in the latch of the lever, when he reversed it quickly in order to stop the train after it had left the track, and not from his arm or elbow coming in contact with the side or end of the cab, when making the movement as claimed by plaintiff in his testimony. We need not enquire which of these theories is correct. There was evidence to support plaintiff's theory, and the jury may well have found it to be correct. But if it be assumed that defendant's theory as to the cause of the injury be correct, the direct cause was defendant's negligence in failing to keep the track in proper condition, which caused the engine to leave the rails, and required plaintiff to reverse the lever in order to arrest the movement of the engine. If this was done in the ex-

ercise of due care, and injury resulted, the proximate cause was defendant's negligence which demanded the reversal of the lever in the manner in which it was done by plaintiff."

The plaintiff was justified in relying upon the promise of the defendant to replace the defective cable with a new one, and should not be held to have anticipated that defendant would not replace such cable. Neither should he be held to have anticipated that the foreman, Akina, would be absent; or, that he would have to leave the hold of the ship where he was working and go to replace the cable. In the case of Helfenstein v. Medart, 136 Mo. 595, the Court, at page 614, said: "It is true that he assumed [815] all risks that were reasonably incidental to the character of his work, but he did not assume risks which might occur by reason of the negligence of his employer, and which he could not have been expected to anticipate." In Dickson v. Omaha, etc., Ry. Co., 124 Mo. 140, the plaintiff's intestate, an engineer, was running his train at a rate of speed that violated a rule of the defendant, and while doing so the engine collided with a bull, the engine was derailed, and the engineer was killed; the bull had strayed upon the track through a defective fence; a statute required the defendant to fence its track. The Court held that the failure of the defendant to keep the fence in repair was the proximate cause of the injury, and not the rate of speed at which the plaintiff's intestate was running his train. This authority recognizes another rule which is well established to the effect that although the servant may have been negligent and

thereby contributed to his injury; or, the injury may have been caused in part by the negligence of a fellow servant, yet, if the master had been negligent in keeping his premises, or appliances which he furnishes the servant to carry on his business, in a suitable and safe condition, he is responsible in damages for injuries received by the servant resulting from his negligence, notwithstanding the negligence of the servant, or fellow servant, unless the negligence of the servant, or fellow servant, was the proximate, or a proximate, cause of the injury. To the same effect, and sustaining the same principle, see the following authorities: Eureka, etc., Co. v. Wells, 29 Ind. App. 1, 6; Hogue v. Sligo Furnace Co., 62 Mo. App. 491; Cole v. Warren Manfg. Co., 63 N. J. L. 626; Paulmier, etc., v. Erie R. R. Co., 34 N. J. L. 151; Benson v. Lumber Co. (Wash.) 129 Pac. 403; Missouri, etc., Ry. Co. v. Jones (Tex. Civ. App.), 80 S. W. 852; Smithwick v. Hall, etc., 59 Conn. 261; Coogan v. Aeolian Co., 87 Conn. 149; Central Ry. Co. v. Mitchell, 63 Ga. 173; [816] Reed v. Railway Co., 72 Iowa, 166; Fickett v. Lisbon Falls Fibre Co., 91 Me. 268; Ford v. Fitchburg Ry. Co., 110 Mass. 240; McDonald v. Mich. Cent. R. Co., 108 Mich. 7; Flynn v. Kansas City, etc., Ry. Co., 78 Mo. 195; Stone v. Boscawen Mills, 71 N. H. 288; Lindsay v. Norfolk & So. R. Co., 132 N. C. 59; Orr v. Southern Bell Tel. & Tel'g. Co., 132 N. C. 691. In Smithwick v. Hall, *supra,* the plaintiff, while helping to store ice for the defendant, stood at a point on a raised platform where it was narrow and not protected by a guard-rail, and slippery with fragments of ice, contrary to

a warning by the foreman that the particular place was dangerous; and while at such place was injured by a brick wall, negligently constructed by the defendant, falling on him. The Court held that he was entitled to substantial damages, saying, at page 269: "Nor was his conduct, legally considered, a cause of the injury. It was a condition rather. If he had not changed his position (from a former one) he might not have been hurt. And so, too, if he had never been born, or had remained at home on the day of the injury, it would not have happened; yet no one would claim that his birth or his not remaining at home that day can in any just or legal sense be deemed a cause of the injury." "In cases where the defendant fails to perform its duty in furnishing safe and suitable appliances, the plaintiff will not be held to have assumed the risk in undertaking to perform a dangerous work, unless the act itself is obviously so dangerous that in its careful performance the inherent probabilities of injury are greater than those of safety." Orr v. South. Bell. Tel. & Tel'g. Co., *supra,* page 694, and authorities there cited. The master assumes the duty of exercising reasonable care and prudence to provide the servant with reasonably safe machinery, appliances and tools to exercise the employment, and to maintain them in a reasonably safe condition. (Davis v. Railroad Co., 55 Vt, 84; Union Pac. Ry. Co. v. O'Brien, 161 U. S. 451.) [817]

Additional authorities other than those cited in the former opinion in this case (ante page 72) upon the proposition that the question of the proximate

cause of the injury to plaintiff was a question for the jury are abundant. In Vinton v. Schwab, 32 Vt. 612, the Court said, at page 614: "But where there is no conflict in the testimony in regard to the particular facts, that will not always make it a mere question of law which the Court may determine. If it still rests upon discretion, experience and judgment, it is a matter of fact and not of law merely. A man in any situation or business is always bound to conform to the rules and usages which prudent and careful men have established in the conduct of similar business under similar circumstances. And it is negligence to make any important departure from such a course, when it proves more injurious to others than the usual course." And, again, it has been said: "What is negligence is a question of law when the facts are undisputed. But where the facts are controverted, or more than one inference can be drawn from them, it is the province of the jury to pass upon an issue involving it. (Deans v. Railroad, 107 N. C. 686.) A mixed question is then presented, and it becomes the duty of the judge, at the request of counsel, to tell the jury how to apply the law of negligence to the various phases of the testimony, and the office of the jury to make the application of the law, as given by the Court, to the facts as found by them." (Tillett v. Railroad, 118 N. C. 1031.) If negligence may be inferred from a proven circumstance, the inference should be made by the jury, and not the Court. (Cole v. Warren Manf'g. Co., *supra.* Any conflict in the evidence touching the

safety and suitableness of the appliance furnished by the master to the servant with which to conduct the business of the master, makes the question one for the jury whose verdict will not be disturbed. (Swift & Co. v. Holoubek, 60 Neb. 784.) But ordinarily the question of negligence is one of intermingled law [818] and fact, and is for the determination of the jury. The law does not—as it cannot—prescribe a general measure of carefulness, except that which varies with the circumstances of each particular case, viz., what would prudent persons ordinarily do under like circumstances. (Kelly v. St. Paul, etc., Ry. Co., 29 Minn. 1.) "Where there are doubtful and qualifying circumstances, the question of negligence or want of proper care is a matter of ordinary observation and experience of the conduct of men, and as such, must be left to the jury, as being within their legal province. The law has said, in these cases, that the plaintiff shall have the judgment of twelve men, and not the opinion of one man." (Bonnell v. Del. Lack. & West. R. R. Co., 39 N. J. L. 189, 192.) And to the same effect are the following decisions: Railroad Co. v. Stout, 17 Wall. 657; Gaynor v. Old Colony R. W. Co., 100 Mass. 208; Salter v. Utica R. R. Co., 88 N. Y. 43; French v. Taunton Branch R. R. Co., 116 Mass. 537; and the Baltimore, etc., R. Co. v. Walborn, 127 Ind. 142, where it is said: "Where the facts are undisputed, and where but one inference can be drawn from the undisputed facts, the question of negligence is one of law; but where more than one inference may be reasonably drawn from the facts, the question is one of fact for the jury,

under proper instructions from the Court." See Gardner v. Michigan Cent. Ry. Co., 150 U. S. 349, and authorities therein cited on page 361. Many other citations along the same lines can be made, but we deem it unnecessary to make them.

It is contended on behalf of the defendant that the plaintiff was guilty of contributory negligence in that he failed to raise the weight taking up the slack of the cable, so as to make it safer and easier to replace the cable upon the pulleys. Upon this phase of the case there were conflicting evidence and theories, that of the plaintiff being that it was not necessary as there were two or three inches of slack at the place where the cable had slipped off the pulleys, all that was necessary; and that lifting the weight would not give any more slack at the place where the [819] cable was to be replaced on the pulleys unless the cable was drawn by hand from the point where the weight was installed, to the point where the cable was to be replaced on the pulleys. The theory of the defendant being that lifting the weight would have given sufficient slack at the point where the pulleys were to be replaced to make it safe to replace them, and that if the weight had been lifted the injury would have been avoided. This feature of the case covering the question whether or not the plaintiff was guilty of contributory negligence which caused his injury was submitted fairly to the jury, by the Court, under proper instructions, and the finding of the jury was against the contention of the defendant, and the verdict, so far as the question of contributory negligence on the part of the plaintiff

is concerned, should not be disturbed. On this point the jury were instructed as follows: "In determining the issue of plaintiff's contributory negligence, you may look to all the surrounding facts and circumstances in evidence before you, and determine therefrom whether or not the plaintiff used such care as a person of ordinary prudence would have used under the same or similar circumstances. If you believe from the evidence that he was using ordinary care and prudence during the attempt to replace the cable at the time of the accident, then, I instruct you that the plaintiff was not guilty of contributory negligence. The law does not oblige a servant to pursue a method which is absolutely safe. All that is required of him is that he shall exercise ordinary care and prudence so that he will save himself from injury, and although you may find that the lifting of the weight, or box, might have been the safest course for the plaintiff to pursue, yet, if you find from the evidence that the plaintiff at the time of the accident was exercising ordinary care during his attempt to replace the cable, then he cannot be said to be guilty of contributory negligence that would bar recovery. In [820] other words, the negligence of the plaintiff, in order to bar recovery, must be such as to directly contribute to his injuries; and without which the accident would not have happened; and it is for you to determine from the evidence whether or not the plaintiff was exercising ordinary care and prudence under all the surrounding circumstances." This particular instruction was excepted to by the defendant, and the giving of it is one of the errors

assigned here, but we think there was no error in giving it. At the request of the defendant, the Court gave the following instruction, more favorable to the defendant, we think, than it was entitled to, to wit: "To warrant a recovery in this case it must appear that the injury was due solely to the want of ordinary care on the part of the employer—the defendant, and unless you so find your verdict should be for the defendant. If you find that the injury was due to the want of such care on the part of the employer combined with want of ordinary care on the part of the plaintiff, then both are at fault, and one cannot recover from the other. Where both parties are negligent, there can be no recovery by either." As we have heretofore shown, the plaintiff is not precluded from recovering on the ground that he has been negligent, unless his negligence was the proximate cause, or a proximate cause, of his injury. Later, at the request of the defendant, the Court gave, after making an immaterial modification, the following instruction: "The law places upon all persons the duty of exercising reasonable care to avoid injury, and even though the jury should believe, from the evidence, that the defendant was negligent, and that the plaintiff was injured thereby, if the evidence also shows that the injury would have been avoided by the exercise of ordinary care by the plaintiff, and that the plaintiff did not exercise such care, you should find for the defendant."

It is also contended that much earnestness on behalf of the defendant that the injury to the plaintiff was the result of [821] an efficient intervening

cause between the alleged negligence of the defendant in failing to replace the defective cable with a suitable one, and such injury, viz., the act of the plaintiff in attempting to replace the cable on the pulleys, for which reason the defendant is not liable. Under the instructions quoted, and a number of other instructions given by the Court, the jury were fully instructed as to the duties of the defendant, as master, and of the plaintiff, as servant. The jury were also fully instructed as to such contributory negligence on the part of the plaintiff as would prevent him from recovering, and the charge of the Court, as a whole, was as favorable to the defendant as the law will justify, if not more so. Under the evidence, and the instructions, the jury were authorized to find the following facts: That the worn and burred condition of the cable caused it to come off the pulleys; that it had a short time before, on two different occasions, come off the pulleys from the same cause; that the defendant's attention was called to the defective condition of the cable, and it promised the plaintiff to replace the cable with a new one; that if it had done so, the injury to plaintiff would not have occurred; that a reasonable and prudent man under the circumstances would have anticipated that the cable would come off the pulleys, and under the circumstances, the plaintiff would attempt to replace it, and that the injury to plaintiff was probable, or liable to happen, owing to the height of the conveyor above ground; that defendant's failure to replace the defective cable with a suitable one was an act of negligence, and the proximate cause of the injury; that the hazard of re-

placing the cable was an extraordinary one made necessary by the defendant's negligence, and the attempt to replace the cable made by plaintiff was not a predominating cause of the injury, but related and connected to defendant's act of negligence, and made necessary thereby; that the plaintiff [822] was not negligent, and acted as an ordinarily careful and prudent man would have acted under the circumstances.

Defendant (plaintiff in error) contends that the defective cable only gave occasion to the act of plaintiff in attempting to replace it on the pulleys. This is true, in that it became necessary to replace the cable. Now, this occasion was an incident to the condition of the cable and grew out of it. The attempt to replace the cable was another incident, and if considered as an intervening act or cause, it is obvious that it grew out of, and related to, and made necessary by, the defective condition of the cable; and was not a separate, distinct, unrelated, or disconnected intervening cause, such as will relieve the master from liability. Many authorities might be cited upon this point, but we will cite only a few of them. "Here, as in other cases, where an injury is the result of several causes combining or concurring to produce it, the master will be liable if he is responsible for any one of such causes. Here, as in other relations, the direct or proximate consequences of a wrongful act are those which occur without any intervening cause; and, where an efficient adequate cause has been found, it must be considered as the true cause unless another, not incident to it, but independent of it, is shown to

have intervened. The test is, to consider where the injury would have happened to the servant but for the negligence of the master with regard to the concurrent act or omission of the third person. Thus, where a servant was injured because of a defective appliance which the master should have repaired, the latter was not relieved from liability because a proximate cause of the accident was the act of a third person, if it would not have occurred but for the failure to repair." (Com. on the Law of Neg., Thompson, Vol. IV, Sec. 3857.) "Negligence and wrongful conduct having been established, the general rule is, that the defendant is liable for the natural and proximate damages resulting therefrom—such consequences [823] as might probably ensue in the natural and ordinary course of events. Though the defendant is not responsible for any events produced by independent intervening circumstances, which have no connection with the primary act; if the intervening agencies are put in operation by the wrongful act of the defendant, the injuries directly produced by such agencies are proximate consequences of the primary cause, though they may not have been contemplated or foreseen. The relation of cause and effect between the tortious act and the intervening agencies being shown, the same relation between the primary wrong and the subsequent injuries is also established; the first wrongful act operating through a succession of circumstances, each connected with, and originated by the next preceding." (East Tenn., Va. & Ga. R. R. Co. v. Lockhart, 79 Ala. 315.) These authorities are in point here, and with other authorities herein

cited, and those cited in the former opinion in this case (ante, page 73), establish the liability of the defendant for the injury sustained by plaintiff, and the verdict is sustained under the evidence, and under the instructions given by the trial Court.

One of the assignments of error is to the refusal of the trial court to give defendant's request for instruction No. 19, which was in the following words: "The jury is instructed that while a plaintiff is, by law, allowed to testify in his own behalf, yet the jury have the right, in weighing his testimony and determining how much credence is to be given it, to take into consideration the fact that he is the plaintiff and directly interested in the result of the suit." This instruction was properly refused. It referred to and made prominent one feature of the evidence, that is, the interest of the plaintiff in the result of the suit. The Court had theretofore given a very proper instruction which applied to plaintiff, as a witness, the same as other witnesses, to the effect, that, in weighing the evidence of witnesses, they should take into consideration "their interest or [824] lack of interest, if any, in the result of the suit."

One of the errors assigned by defendant is that the verdict for $13,000 is excessive and unreasonable. This was also one of the grounds of the motion for a new trial, which the trial Court overruled. The evidence shows that prior to the injury plaintiff was a healthy, strong, robust man, with unimpaired vision and hearing, of the age of forty years, and earning six dollars per day; that his expectancy

of life was 27.61 years; that he suffered a basic fracture of the skull, concussion of the brain, a central dislocation of the hip, a distortion of the spine, an impairment of vision and hearing, and that his earning capacity was considerably diminished; and, from the time of the injury to the trial he suffered, continually, great physical pain. As to the measure of damages, among other instructions, the Court gave the following: "If the jury finds from the evidence that the plaintiff is entitled to recover, as alleged in his complaint, in estimating the plaintiff's damages you may take into consideration his physical condition prior to the injury, and also his physical condition since the injury, if you believe from the evidence that his physical condition since the accident has been impaired as a result of such injury; you may further take into consideration in estimating the damages, if you find that he is entitled to any damages, whether or not he has been deprived, by reason of the negligence of the defendant, of the ability to earn money, and if so, to what extent; and you may also consider whether or not he has been permanently injured, and if so, to what extent; you may also consider his mental and physical pain and suffering, past, present, or future, if any, occasioned by his injuries, and in your dispassionate judgment allow him such sum as will fairly compensate him in so far as the evidence may here show you he is entitled to damages in these respects." The giving of this instruction is not [825] challenged by defendant's assignments of error, and under it, and the evidence, we are not justified in holding that the

amount of the verdict, while large, was the result of passion or prejudice, or that it awarded to the plaintiff other than compensatory damages; hence, we do not hold that the damages awarded are excessive. Fixing the amount of damages in a case of this kind is a matter within the discretion of the jury (Sec. 2378 R. L. 1915) whose verdict will not be interfered with by the Court, unless it is so excessive and outrageous, when considered with reference to the circumstances of the case, as to demonstrate that the jury have acted against the rules of law, or have suffered their passions or prejudices to mislead them. (13 Cyc. pp. 121, 124 and authorities cited in notes.)

We have carefully examined the record with reference to all of the errors assigned which were not abandoned, and find no reversible error, either in the admission or rejection of evidence, nor in the instructions, and are of the opinion that the judgment should be affirmed, with costs to plaintiff (defendant in error), and it is so ordered.

Affirmed.

A. G. M. ROBERTSON.
RALPH P. QUARLES.

E. W. SUTTON and W. L. STANLEY (SMITH, WARREN, HEMENWAY & SUTTON and HOLMES, STANLEY & OLSON on the brief), for Plaintiff in Error.

E. A. DOUTHITT (DOUTHITT & COKE on the brief), for Defendant in Error. **[826]**

[Concurring Opinion of Watson J., of Supreme Court, Territory of Hawaii.]

Concurring opinion of WATSON, J.

I concur in the conclusion arrived at by the majority that the judgment should be affirmed with costs to plaintiff (defendant in error).

Touching the question of the proximate cause of plaintiff's injury and the propriety of the trial Court's action in submitting this issue to the jury, whatever my views might be upon this question as an original proposition, I am of the opinion that the decision of this Court on the former writ of error (*ante*, p. 66), where the same question was considered and decided, became the law of the case and is not now open for re-examination. On the former hearing the position of this Court on the question of proximate cause is expressed in the syllabus as follows:

> "The defendant having negligently continued the use of a defective cable on its coal-conveyor which, by reason of its defective condition, came off certain pulleys designed to hold it in position, and the plaintiff, an employee of the defendant on the conveyor, in attempting to restore the cable to its proper position was injured. The question, whether the proximate cause of the plaintiff's injury was the negligence of the defendant in failing to furnish a reasonably safe cable for use, is not a question of science or legal knowledge, but a question of fact for determination by a jury."

From this it appears that the Court expressly held that the plaintiff's evidence bearing on the question of proximate cause (which evidence was substantially the same on the second trial) was sufficient to carry the case to the jury, and in my opinion it must now be held that the conclusion arrived at then must be the law in this case. What was there decided is not now open for discussion and must be held to be *res adjudicata.* In my opinion this question involved the only substantial defense relied on by the defendant, and unless the court has committed error in the instructions or has admitted or rejected evidence which was prejudicial to the defendant's case the judgment will have to be affirmed. **[827]**

Counsel for plaintiff in error strongly urge that the former ruling of this Court on the question of proximate cause may and should be re-examined on this second writ of error, and, conceding that the view contended for by them is that adopted by the minority of the state courts, cite the case of Hastings v. Foxworthy, 45 Neb. 676, 34 L. R. A. 321, decided by the Supreme Court of Nebraska in 1895, as holding that an Appellate Court on a second appeal may and should examine and reverse its rulings made on the first appeal when the opinion first expressed is manifestly incorrect. I am of the opinion that the Foxworthy case is of little value as an authority in considering the case at bar. In that case (34 L. R. A. 335) the Court distinctly states:

> "So far as any express decision or actual consideration of the question concerned, it has never arisen in this case, and following the de-

cision in * * * the question must be solved in favor of the contention of the city unless by *implication* it has formerly been otherwise resolved in this case, and unless, further, the Court is bound by such *implied* decision so far as this case is concerned."

Again, on page 336, it is said: "The Court may be said to have already three times *impliedly* decided the question now before us * * * *although on no occasion was that question, in fact, considered or actually decided.*"

In the case at bar the question sought to be re-examined has been considered and expressly decided. If not expressly overruled, the doctrine laid down in the Foxworthy case seems to have been abandoned or repudiated by the Supreme Court of Nebraska. In the case of Smith v. Neufeld, 61 Neb. 699, decided by the Supreme Court of Nebraska in 1901, the court, in discussing the doctrine of law of the case, on page 701, says:

"Following an almost unbroken line of authorities in other jurisdictions this Court in a number of early cases held that when a question in controversy has been once squarely decided, the decision, if acquiesced in, or if not recalled, becomes the law of the case and is binding upon the parties and those claiming through or under them in all subsequent stages of litigation. This doctrine was, it is true, challenged as harsh and unjust in City of Hastings v. Foxworthy, 45 Neb. 676, but it has been reiterated and reaffirmed in many cases since decided and may

now be regarded as firmly established in the jurisprudence of this state." [828]

On all of the other questions involved in this second writ of error and discussed in the foregoing opinion I concur with the majority in their reasoning and conclusions.

E. M. WATSON. [829]

Filed March 24, 1915, at 2:20 P. M.

In the Supreme Court of the Territory of Hawaii.
October Term, 1914.

GEORGE E. WARD,
Plaintiff and Defendant in Error,
vs.
INTER-ISLAND STEAM NAVIGATION COMPANY, LIMITED, a Hawaiian Corporation,
Defendant and Plaintiff in Error,

Judgment [of Supreme Court, Territory of Hawaii, Filed April 7, 1915].

ERROR TO CIRCUIT COURT, FIRST CIRCUIT.

This cause coming on for hearing in this court, and the Court having considered the same and heard the argument of the respective counsel, and having heretofore, to wit, on March 24, 1915, rendered a written opinion herein,

IT IS ORDERED, ADJUDGED AND DECREED, That, pursuant to said written opinion, the judgment of the Circuit Court of the First Judicial Circuit, Territory of Hawaii, entered on the 29th day of June, 1914, is affirmed.

Dated, Honolulu, T. H., April 7th, A. D. 1915.
By the Court:
[Seal] J. A. THOMPSON,
Clerk Supreme Court.

Approved:
E. M. WATSON.
Filed April 7, 1915, at 10:20 A. M. **[831]**

In the Supreme Court of the Territory of Hawaii.

INTER-ISLAND STEAM NAVIGATION COMPANY, an Hawaiian Corporation,
Defendant, Plaintiff in Error,
vs.
GEORGE E. WARD,
Plaintiff, Defendant in Error.

Petition for Writ of Error and Supersedeas.

The above-named defendant, INTER-ISLAND STEAM NAVIGATION COMPANY, LIMITED, an Hawaiian corporation, deeming itself aggrieved by the judgment of the Honorable, the Supreme Court of the Territory of Hawaii entered in a cause entitled George E. Ward, Plaintiff, vs. Inter-Island Steam Navigation Company, Limited, an Hawaiian corporation, defendant, on or about the 7th day of April, 1915, comes now by Smith, Warren, Hemenway, & Sutton, and Holmes, Stanley & Olson, its attorneys, and hereby humbly petitions said Supreme Court of the Territory of Hawaii for an order allowing said Inter-Island Steam Navigation Company, Limited, to prosecute a writ of error and have the same allowed and issued from the United States Circuit Court of Appeals for the Ninth Circuit to

said Supreme Court of the Territory of Hawaii under and according to the laws of the United States in that behalf made and provided, and that a transcript of the record, proceedings and documentary exhibits upon which said judgment was made duly authenticated, and also the physical exhibits may be sent to said United States Circuit Court of Appeals for the Ninth Circuit; and also that an order may be made by this Honorable Court fixing the amount of the bond which the said defendant shall give and furnish upon said writ of error, and that upon the filing of such bond all proceedings in said cause in the Supreme Court of [832] the Territory of Hawaii and in the Circuit Court of the First Judicial Circuit of the Territory of Hawaii be suspended and stayed until the determination of such writ of error by the Honorable, the United States Circuit Court of Appeals for the Ninth Circuit.

And in this behalf your petitioner shows that said judgment was rendered in an action at law and that the amount involved, exclusive of costs, exceeds the value of $5,000, and amounts to to wit, the sum of $13,000, and in addition thereto costs taxed amounting to the sum of $97 and upwards.

SMITH, WARREN, HEMENWAY & SUTTON,
HOLMES, STANLEY & OLSON,
Attorneys for Petitioner.

Dated, Honolulu, T. H., April 12th, 1915.

Territory of Hawaii,
City and County of Honolulu,—ss.

E. W. Sutton, being duly sworn, deposes and says that he is one of the attorneys for the above petitioner; that he has read the foregoing petition and knows its contents, and that the matters and things therein set forth are true of his own knowledge; and further that the amount involved in said cause, exclusive of costs, exceeds the value of $5,000 and amounts to the sum of $13,000, and in addition thereto costs taxed in the sum of $97.00 and upwards.

E. W. SUTTON.

Subscribed and sworn to before me this 13th day of April, 1915.

[Seal] J. A. THOMPSON,
Clerk Supreme Court, Territory of Hawaii. [833]

Filed April 13, 1915, at 10:45 A. M. [834]

In the Supreme Court of the Territory of Hawaii.

INTER-ISLAND STEAM NAVIGATION COMPANY, LIMITED, an Hawaiian Corporation,
Defendant, Plaintiff in Error,

vs.

GEORGE E. WARD,
Plaintiff, Defendant in Error.

Assignments of Error.

And now comes the INTER-ISLAND STEAM NAVIGATION COMPANY, LIMITED, an Hawaiian corporation, the defendant and plaintiff in

error in the above-entitled cause, by Smith, Warren, Hemenway & Sutton, and Holmes, Stanley & Olson, its attorneys, and says that in the record and proceedings in the above-entitled cause in the Supreme Court of the Territory of Hawaii, there is manifest error to the prejudice of said defendant and plaintiff in error in this to wit:

(1) That the Supreme Court of the Territory of Hawaii erred in its judgment in affirming the judgment of the Circuit Court of the First Judicial Circuit of the Territory of Hawaii for the reason that said judgment was and is contrary to the evidence and the law;

(2) That the Supreme Court of the Territory of Hawaii erred in affirming the action of the Honorable William J. Robinson, Third Judge of said Circuit Court, in denying the motion of the defendant in said action, plaintiff in error, for a judgment of nonsuit for the reason that the plaintiff in said action failed to show that the defendant was guilty of negligence as charged or at all; that the proximate cause of the injury to the plaintiff [835] was his own act; that the evidence showed the plaintiff to be guilty of negligence which not only contributed to the accident but without which the same could not have occurred, and for the reason that the evidence shows that the plaintiff assumed all risks of the employment which resulted in the accident;

(3) That the Supreme Court of the Territory of Hawaii erred in affirming the action of said Circuit Court in refusing to instruct the jury in said cause to render a verdict for the defendant, plaintiff

herein, as requested by said defendant, said requested instruction being as follows:

I instruct you gentlemen of the jury that there is no evidence tending to prove that the negligence of the defendant if any, was the proximate cause of the injuries sustained by the plaintiff, and that your verdict must be for the defendant.

(4) That said Supreme Court of the Territory of Hawaii erred in affirming the action of the jury in said Circuit Court before whom said cause was tried in rendering their verdict in favor of the plaintiff and against the defendant in the sum of $13,000, for the reason that there was no evidence tending to prove that the negligence of the defendant, if any, was the proximate cause of the injuries sustained by the plaintiff, and that said verdict should have been for the defendant;

(5.) That the Supreme Court of the Territory of Hawaii erred in affirming the action of such Circuit Court in denying the motion of the plaintiff in error for a new trial, for the reason that said verdict of said jury was and is contrary to the law and the evidence and the weight of the evidence;

(6) That the Supreme Court of the Territory of Hawaii erred in affirming the action of said Circuit Court in giving, rendering, entering and filing judgment in favor of plaintiff and against the defendant in the sum of $13,000, together with costs **[836]** taxed in the sum of $97.20 for the reason that the plaintiff in said action failed to show that the defendant was guilty of negligence as charged or at all; that the proximate cause of the injury to the

plaintiff was his own act; that the evidence showed the plaintiff to be guilty of negligence which not only contributed to the accident but without which the same could not have occurred, and for the reason that the evidence shows that the plaintiff assumed all risks of the employment which resulted in the accident.

INTER-ISLAND STEAM NAVIGATION COMPANY, LTD.,

By Its Attorneys

SMITH, WARREN, HEMENWAY & SUTTON,

HOLMES, STANLEY & OLSON,

Dated, Honolulu, this 12th day of April, 1915. [837]

Filed April 13, 1915, at 10:45 A. M. [838]

In the Supreme Court of the Territory of Hawaii.

INTER-ISLAND STEAM NAVIGATION COMPANY, LIMITED, an Hawaiian Corporation,

Defendant, Plaintiff in Error,

vs.

GEORGE E. WARD,

Plaintiff, Defendant in Error.

Order Allowing Writ of Error and Supersedeas.

Upon reading and filing the foregoing petition for a writ of error together with an assignment of errors presented therewith, alleged to have occurred in the judgment of this Court and in the proceedings in the

trial of said cause prior thereto, IT IS ORDERED that a writ of error be and the same is hereby allowed to the said Inter-Island Steam Navigation Company, Limited, to have reviewed by the United States Circuit Court of Appeals for the Ninth Circuit the judgment heretofore entered in the above-entitled cause and the proceedings in the trial of said cause prior thereto, and that the amount of the bond to be filed in this court by said Inter-Island Steam Navigation Company, Ltd., in connection with the writ of error prayed for, be and the same is hereby fixed in the sum of $16,000.00; and IT IS FURTHER ORDERED that upon the filing of an aproved bond in said amount all further proceedings in said Supreme Court of the Territory of Hawaii and in the Circuit Court of the First Judicial Circuit of the Territory of Hawaii in said cause shall be suspended and stayed until the determination of such writ of error by the United [839] States Circuit Court of Appeals for the Ninth Circuit.

Dated at Honolulu this 13th day of April, 1915.

[Seal] E. M. WATSON,

Associate Justice of the Supreme Court of the Territory of Hawaii, Acting in the Absence of the Chief Justice. [840]

Filed April 13, 1915, at 10:45 A. M. [841]

In the Supreme Court of the Territory of Hawaii.

INTER-ISLAND STEAM NAVIGATION COMPANY, LIMITED, an Hawaiian Corporation,

Defendant, Plaintiff in Error,

vs.

GEORGE E. WARD,

Plaintiff, Defendant in Error.

Supersedeas and Cost Bond on Writ of Error.

KNOW ALL MEN BY THESE PRESENTS: That we, Inter-Island Steam Navigation Company, Limited, an Hawaiian corporation, as principal, and J. M. Dowsett and C. H. Cooke, both of the City and County of Honolulu, Territory of Hawaii, as sureties, are jointly and severally held and firmly bound unto George E. Ward in the full and just sum of $16,000.00, to the payment whereof well and truly to be made we hereby bind ourselves and the heirs, executors, administrators, successors and assigns of said sureties, respectively, firmly by these presents.

WITNESS our hands and seals this 12th day of April, 1915.

The condition of this obligation is as follows:

Whereas in the above-entitled cause a petition has been filed for the allowance of a writ of error to have the judgment of said Supreme Court of the Territory of Hawaii rendered in the above-entitled cause on or about the 7th day of April, 1915, and the proceedings in said cause prior thereto reviewed by the United States Circuit Court of Appeals for the Ninth

Circuit and to have isued a supersedeas herein: [842]

NOW, THEREFORE, if such writ of error and supersedeas shall issue according to the prayer of the petition in that behalf and if the said Inter-Island Steam Navigation Company, Limited, the above bounden principal, shall prosecute said writ of error to effect and answer all damages and costs, if it fail to make its plea good, then the above obligation shall be void,—otherwise the same shall be and remain in full force and virtue.

INTER-ISLAND STEAM NAVIGATION CO., LTD.,

By JAS. L. McLEAN,
Its Vice-President.

By N. E. GEDGE, (Seal)
Its Treasurer.

J. M. DOWSETT.

C. H. COOKE.

Territory of Hawaii,
City and County of Honolulu,—ss:

J. M. Dowsett and C. H. Cooke, being first duly sworn, depose and say each for himself that he is a resident of Honolulu, Hawaii, and is worth double the amount of the penalty in the foregoing bond in property located in said Honolulu, and not exempt from execution over and above all his debts and liabilities.

J. M. DOWSETT.

C. H. COOKE.

Subscribed and sworn to before me this 12th day of April, 1915.

[Seal] E. W. SUTTON,

Notary Public, First Judicial Circuit, Territory of Hawaii.

Approved as to form and sufficiency.

J. T. DE BOLT,

Attorney for the Plaintiff.

The foregoing bond is approved as to form and sufficiency this 13th day of April, 1915.

[Seal] E. M. WATSON,

Associate Justice, Supreme Court of the Territory of Hawaii, Acting in the Absence of the Chief Justice. [843]

Filed April 13, 1915, at 10:45 A. M. [844]

Writ of Error [Copy].

UNITED STATES OF AMERICA,—ss.

The President of the United States of America, to the Honorable the Justices of the Supreme Court of the Territory of Hawaii, Greeting:

Because in the record and proceedings, as also in the rendition of the judgment of a plea which is in the Supreme Court of the Territory of Hawaii, before you, or some of you, between GEORGE E. WARD, plaintiff (defendant in error), and INTER-ISLAND STEAM NAVIGATION COMPANY, LIMITED, an Hawaiian corporation, defendant (plaintiff in error), a manifest error hath happened, to the great damage of the said Inter-Island Steam Navigation Company, Limited, as is said and appears

by the complaint: We, being willing that such error, if any hath been, should be duly corrected, and full and speedy justice done to the parties aforesaid in this behalf, do command you, if judgment be therein given, that then, under your seal, distinctly and openly you send the record and procedings aforesaid, with all things concerning the same to the Justices of the United States Circuit Court of Appeals for the Ninth Circuit, at the courtrooms of said Court in the City of San Francisco, State of California, together with this writ, so that you have the same at the said place, before the Justices aforesaid on the 12th day of May next, that the record and proceedings aforesaid being inspected, the said Justices of the said Circuit Court of Appeals may cause further to be done therein, to correct that error, what of right and according to the law and custom of the United States ought to be done.

WITNESS the Honorable EDWARD DOUGLASS WHITE, Chief Justice [845] of the Supreme Court of the United States, this 13th day of April, in the year of our Lord One Thousand Nine Hundred and Fifteen, and of the Independence of the United States the One Hundred and Fortieth.

[Seal] J. A. THOMPSON,
Clerk of the Supreme Court of the Territory of Hawaii.

The foregoing writ is hereby allowed.

[Seal] E. M. WATSON,

Associate Justice of the Supreme Court of the Territory of Hawaii Acting in the Absence of the Chief Justice.

Filed Apri 13, 1915, at 10:45 A. M. [846]

[Citation on Writ of Error (Copy).]

UNITED STATES OF AMERICA,—ss.

To George E. Ward, Greeting:

You are hereby cited and admonished to be and appear in the United States Circuit Court of Appeals for the Ninth Circuit at San Francisco, State of California, within thirty days after the date of this citation, pursuant to a writ of error filed in the Clerk's office of the Supreme Court of the Territory of Hawaii, wherein Inter-Island Steam Navigation Company, Limited, is plaintiff in error and you are defendant in error, to show cause, if any there be, why the judgment rendered against the said plaintiff in error as in the said writ of error mentioned should not be corrected and why speedy justice should not be done to the parties in that behalf.

WITNESS the Honorable EDWARD DOUGLASS WHITE, Chief Justice of the Supreme Court of the United States, this 13th day of April, 1915.

[Seal] E. M. WATSON,

Associate Justice of the Supreme Court of the Territory of Hawaii, Acting in the Absence of the Chief Justice.

Due and personal service of the above citation and

receipt of a true copy hereof is hereby admitted this 13th day of April, A. D. 1915.

J. T. DE BOLT,
Attorney for George E. Ward.

Filed and issued for service this 13th day of April, 1915, at 10:45 A. M. [847]

In the Supreme Court of the Territory of Hawaii.

INTER-ISLAND STEAM NAVIGATION COMPANY, LIMITED, an Hawaiian Corporation, Defendant,

Plaintiff in Error,

vs.

GEORGE E. WARD, Plaintiff,

Defendant in Error.

Order Extending Time for Preparation and Transmission of Record.

Upon the application of counsel for plaintiff in error, and good cause appearing therefor, and pursuant to Section 1 of Rule 16 of the United States Circuit Court of Appeals for the Ninth Circuit, it is hereby ordered that the plaintiff in error and the clerk of this court be and they are hereby allowed until and including the 30th day of June, 1915, within which time to prepare and transmit to the clerk of the Circuit Court of Appeals for the Ninth Circuit, at San Francisco, California, the record in the above-entitled cause on assignment of errors in this court, together with said assignment of errors and all other papers required as part of said record.

Dated Honolulu, Territory of Hawaii, May 5th, 1915.

[Seal] E. M. WATSON,

Associate Justice, Supreme Court, Territory of Hawaii, Acting in the Absence of the Chief Justice.

Approved:

J. T. DE BOLT,

Atty. for Deft. in Error.

Filed May 5, 1915, at 3:20 P. M. [848]

In the Supreme Court of the Territory of Hawaii.

INTER-ISLAND STEAM NAVIGATION COMPANY, LIMITED, an Hawaiian Corporation,

Defendant, Plaintiff in Error,

vs.

GEORGE E. WARD,

Plaintiff, Defendant in Error.

Amended Praecipe for Transcript.

To James A. Thompson, Esquire, Clerk of the Supreme Court of the Territory of Hawaii.

You will please prepare a transcript of the record in this cause (said cause being entitled in the Supreme Court of the Territory of Hawaii: "George E. Ward, Plaintiff and Defendant in Error, vs. Inter-Island Steam Navigation Company, Limited, Defendant and Plaintiff in Error") to be filed in the office of the Clerk of the United States Circuit Court of Appeals for the Ninth Circuit under the Writ of Error heretofore issued by said Court, and include in said transcript the following pleadings, proceed-

ings, opinions, judgments and papers on file in said cause, to wit:—

1. Petition for writ of error to First Circuit Court, Territory of Hawaii.
2. Assignment of errors.
3. Notice of issuance of writ of error.
4. Summons and return of service.
5. Bond on writ of error. [849]
6. Writ of error.
7. Appearance and answer to writ of error.
8. Copy of bill of complaint.
9. Copy of term summons with return of service.
10. Copy of answer of defendant.
11. Copy of plaintiff's demand for trial by jury.
12. Copy of plaintiff's motion to amend complaint, and notice.
13. Copy of opinion of Supreme Court dated March 14, 1914.
14. Copy of judgment of Supreme Court dated March 25, 1914.
15. Copy of defendant's requested instruction No. 1A.
16. Copy of verdict of jury, dated June 19, 1914.
17. Copy of judgment of Circuit Court, dated June 29, 1914.
18. Copy of defendant's motion for a new trial.
19. Copy of transcript of evidence on second trial.
20. Copy of opinion of Supreme Court.
21 Copy of judgment of Supreme Court.
22. Copy of appearance of J. T. De Bolt as attorney for plaintiff.
23. Copy of petition for writ of error.

24. Copy of assignment of errors.
25. Copy of citation on writ of error and return of service.
26. Copy of bond on writ of error.
27. Copy of writ of error.
28. Copy of appearance and answer to writ of error.
29. Copy of order extending time for preparation and transmission of record.
30. Copy of amended praecipe for transcript.

And in addition you will please transmit with the foregoing all of the following exhibits: [850]

Plaintiff's Exhibit "A," being a model of the coal-conveyor.

Defendant's Exhibit 1, being blue-print of the coal-conveyor.

Defendant's Exhibit 5, being a pulley worn by cable.

Defendant's Exhibit 7, being a dolly worn by cable.

You will also annex to and transmit with the record, the original Writ of Error from the United States Circuit Court of Appeals for the Ninth Circuit and Citation with return of service, your return to the Writ of Error under the seal of the Supreme Court of the Territory of Hawaii, and also your certificate under seal stating in detail the cost of the record and by whom the same was paid.

Honolulu, May 20, 1915.

Respectfully,
W. O. SMITH,
L. J. WARREN,
C. R. HEMENWAY,
E. W. SUTTON,
SMITH, WARREN, HEMENWAY & SUTTON,
By E. W. SUTTON.
HENRY HOLMES,
W. L. STANLEY,
C. H. OLSON,
HOLMES, STANLEY & OLSON,
By W. L. STANLEY. **[851]**

Filed May 20, 1915, at 3:10 P. M. **[852]**

In the Supreme Court of the Territory of Hawaii.

INTER-ISLAND STEAM NAVIGATION COMPANY, LIMITED, an Hawaiian Corporation,
Defendant, Plaintiff in Error,
vs.
GEORGE E. WARD,
Plaintiff, Defendant in Error.

Order for the Transmission of Original Exhibits.

To James A. Thompson, Esquire, Clerk of the Supreme Court of the Territory of Hawaii.

You are hereby authorized and directed in connection with the writ of error from the United States Circuit Court of Appeal for the Ninth Circuit in the above-entitled suit, to transmit as part of the record required by the praecipe of the plaintiff in error, the

following exhibits upon its counsel undertaking to return them to the files of this Court:

Plaintiff's Exhibit "A," being a model of the coal-conveyor.

Defendant's Exhibit 1, being blue-print of the coal-conveyor.

Defendant's Exhibit 5, being a pulley worn by cable.

Defendant's Exhibit 7, being a dolly worn by cable.

Dated, Honolulu, T. H., May 20, 1915.

[Seal] A. G. M. ROBERTSON,

Chief Justice of the Supreme Court of the Territory of Hawaii. [853]

Filed May 20, 1915, at 3:10 P. M. [854]

In the Supreme Court of the Territory of Hawaii.

INTER-ISLAND STEAM NAVIGATION COMPANY, LIMITED, an Hawaiian Corporation,
Defendant, Plaintiff in Error,

vs.

GEORGE E. WARD,
Plaintiff, Defendant in Error.

Undertaking to Return Original Exhibits.

To James A. Thompson, Esquire, Clerk of the Supreme Court of the Territory of Hawaii:

We hereby undertake to return to the files of the Supreme Court of the Territory of Hawaii the following original exhibits sent to the United States Circuit Court of Appeal for the Ninth Circuit in accordance with the order of the Chief Justice of the Supreme Court of the Territory of Hawaii:

Plaintiff's Exhibit "A," being a model of the coal-conveyor.

Defendant's Exhibit 1, being blue-print of the coal-conveyor.

Defendant's Exhibit 5, being a pulley worn by cable.

Defendant's Exhibit 7, being a dolly worn by cable.

SMITH, WARREN, HEMENWAY & SUTTON,

By E. W. SUTTON,

HOLMES, STANLEY & OLSON,

By W. L. STANLEY,

Attorneys for Plaintiff in Error.

Dated, Honolulu, T. H., May 20, 1915. [855]

Filed May 20, 1915, at 3:10 P. M. [856]

Writ of Error [Original].

UNITED STATES OF AMERICA.—ss.

The President of the United States of America, to the Honorable the Justices of the Supreme [Seal] Court of the Territory of Hawaii, Greeting:

Because in the record and proceedings, as also in the rendition of the judgment of a plea which is in the Supreme Court of the Territory of Hawaii, before you, or some of you, between George E. Ward, plaintiff (defendant in error), and Inter-Island Steam Navigation Company, Limited, an Hawaiian corporation, defendant (plaintiff in error), a manifest error hath happened, to the great damage of the said Inter-Island Steam Navigation Company, Limited, as is said and appears by the complaint: We, being willing that such error, if any hath been,

should be duly corrected, and full and speedy justice done to the parties aforesaid in this behalf, do command you, if judgment be therein given, that then, under your seal, distinctly and openly you send the record and proceedings aforesaid, with all things concerning the same to the Justices of the United States Circuit Court of Appeals for the Ninth Circuit, at the courtrooms of said court in the City of San Francisco, State of California, together with this writ so that you have the same at the said place, before the Justices aforesaid on the 12th day of May next, that the record and proceedings aforesaid being inspected, the said Justiecs of the said Circuit Court of Appeals may cause further to be done therein, to correct that error, what of right and according to the law and custom of the United States ought to be done.

WITNESS the Honorable EDWARD DOUGLASS WHITE, Chief Justice [857] of the Supreme Court of the United States, this 13th day of April, in the year of our Lord One Thousand Nine Hundred and Fifteen, and of the Independence of the United States the One Hundred and Fortieth.

[Seal] J. A. THOMPSON,

Clerk of the Supreme Court of the Territory of Hawaii.

The foregoing writ is hereby allowed.

E. M. WATSON,

Associate Justice of the Supreme Court of the Territory of Hawaii, Acting in the Absence of the Chief Justice. [858]

Filed April 13, 1915, at 10:45 A. M. [859]

Citation on Writ of Error [Original].

UNITED STATES OF AMERICA,—ss.

To George E. Ward, Greeting:

You are hereby cited and admonished to be and appear in the United States Circuit Court of Appeals for the Ninth Circuit at San Francisco, State of California, within thirty days after the date of this citation pursuant to a writ of error filed in the clerk's office of the Supreme Court of the Territory of Hawaii, wherein Inter-Island Steam Navigation Company, Limited, is plaintiff in error and you are defendant in error, to show cause, if any there be, why the judgment rendered against the said plaintiff in error as in the said writ of error mentioned should not be corrected and why speedy justice should not be done to the parties in that behalf.

WITNESS the Honorable EDWARD DOUGLASS WHITE, Chief Justice of the Supreme Court of the United States, this 13th day of April, 1915.

[Seal] E. M. WATSON,

Associate Justice of the Supreme Court of the Territory of Hawaii, Acting in the Absence of the Chief Justice.

Due and personal service of the above citation and receipt of a true copy hereof is hereby admitted this 13th day of April, A. D. 1915.

J. T. DE BOLT,

Attorney for George E. Ward. **[860]**

Filed and Issued for Service this 13th day of April, 1915, at 10:45 A. M. **[861]**

In the Supreme Court of the Territory of Hawaii.

INTER-ISLAND STEAM NAVIGATION COMPANY, LIMITED, an Hawaiian Corporation, Defendant,

Plaintiff in Error,

vs.

GEORGE E. WARD, Plaintiff,

Defendant in Error.

Order Extending Time for Preparation and Transmission of Record.

Upon the application of counsel for plaintiff in error, and good cause appearing therefor, and pursuant to Section 1 of Rule 16 of the United States Circuit Court of Appeals for the Ninth Circuit, it is hereby ordered that the plaintiff in error and the clerk of this court be and they are hereby allowed until and including the 30th day of June, 1915, within which time to prepare and transmit to the Clerk of the Circuit Court of Appeals for the Ninth Circuit, at San Francisco, California, the record in the above-entitled cause on assignments of errors in this court, together with said assignment of errors and all other papers required as part of said record.

Dated, Honolulu, Territory of Hawaii, May 5th, 1915.

[Seal] E. M. WATSON,

Associate Justice, Supreme Court, Territory of Hawaii, Acting in the Absence of the Chief Justice.

Approved:

J. T. DE BOLT,

Atty. for Deft. in Error. **[862]**

Filed May 5, 1915, at 3:20 P. M. **[863]**

In the Supreme Court of the Territory of Hawaii.

OCTOBER TERM, 1914.

GEORGE E. WARD,

Plaintiff and Defendant in Error.

vs.

INTER-ISLAND STEAM NAVIGATION COMPANY, LIMITED., an Hawaiian Corporation,

Defendant and Plaintiff in Error.

Certificate of Clerk to Transcript of Record and Return to Writ of Error.

Territory of Hawaii,
City and County of Honolulu,—ss.

I, James A. Thompson, Clerk of the Supreme Court of the Territory of Hawaii, in obedience to the within writ of error, the original whereof is herewith returned, being pages 857 to 859, both inclusive, of the foregoing transcript, and in pursuance of the amended praecipe to me directed, a copy

whereof is hereto attached, being pages 849 to 852, both inclusive, DO HEREBY transmit to the Honorable United States Circuit Court of Appeals for the Ninth Circuit the foregoing transcript of record, being pages 1 to 848, both inclusive, and pages 855 to 856, both inclusive, and I certify the same to be full, true and correct copies of the pleadings, record, entries and final judgment which are on file and of record in the office of the Clerk of the Supreme Court of the Territory of Hawaii in the case entitled in said Court "George E. Ward, Plaintiff and Defendant in Error, vs. Inter-Island Steam Navigation Company, Limited, an Hawaiian Corporation, Defendant and Plaintiff in Error," and numbered 736 and 817;

I do further certify that the Original Citation with Acknowledgment of Service thereof, being pages 860 to 861, both inclusive, and the [864] Original Order Extending Time for Preparation and Transmission of Record, being pages 862 to 863, both inclusive, of the foregoing transcript of record are hereto attached and herewith returned.

I further certify that pursuant to an order herein filed, a copy whereof is hereto attached, being pages 853 to 854, both inclusive, I have concluded and do transmit herewith as part of the record in the foregoing entitled cause, the following original exhibits, viz.:

(1) Plaintiff's Exhibit "A," being a model of the coal-conveyor,

(2) Defendant's Exhibit 1, being blue-print of the coal-conveyor,

(3) Defendant's Exhibit 5, being a pulley worn by cable, and

(4) Defendant's Exhibit 7, being a dolly worn by cable.

I lastly certify that the cost of the foregoing transcript of record is $296.20, and that said amount has been paid by Messrs. Smith, Warren, Hemenway & Sutton, the attorneys for the appellant herein.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the Seal of the Supreme Court of the Territory of Hawaii, at Honolulu, City and County of Honolulu, this 17th day of June, A. D. 1915.

[Seal] JAMES A. THOMPSON,
Clerk Supreme Court of the Territory of Hawaii.
[865]

[Endorsed]: No. 2617. United States Circuit Court of Appeals for the Ninth Circuit. Inter-Island Steam Navigation Company, Limited, an Hawaiian Corporation, Plaintiff in Error, vs. George E. Ward, Defendant in Error. Transcript of Record. Upon Writ of Error to the Supreme Court of the Territory of Hawaii.

Filed June 24, 1915.

F. D. MONCKTON,
Clerk of the United States Circuit Court of Appeals for the Ninth Circuit.

By Meredith Sawyer,
Deputy Clerk.